

Stanford
University
School of
Medicine
Forty
Careers in
Medicine



Profiles of
forty alumni
of Stanford
University School
of Medicine who
have devoted their
careers to advancing
medical science,
education, and
patient care.



This book
is a tribute to all
graduates of
Stanford University
School of
Medicine.



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orty years ago, Stanford

medical school relocated from San Francisco to Palo Alto. The move, which brought clinical and basic science programs together on one campus, dramatically transformed the school, reshaping the curriculum, expanding research opportunities, and promoting interactions among students and faculty across the university.

This academic year, 1999-2000, we are celebrating the anniversary of this historic move by recognizing the people who have helped shape the school and contribute to its eminence. Among those who have made a lasting impact on the institution are its students, who came here to seek knowledge and then embarked

on fruitful careers in clinical medicine, scientific research, public service, and education. These individuals add to Stanford's rich legacy, carrying forth its energy and spirit to communities worldwide.

This book is dedicated to the alumni and students of the School of Medicine who embody its proud traditions. Forty individuals are featured; these alumni represent a variety of careers, and, as a group, reflect the vibrancy and diversity of generations of Stanford graduates. The 40 profiles offer snapshots of the extraordinary contributions that Stanford's alumni have made to the advancement of medical science and clinical practice.

We hope this collection of biographies will serve as a tribute to all of those who have devoted their lives to medicine and will be an inspiration to others who are considering a career in the field.

William M. Abbott, MD

Class of 1961

Vascular Surgeon, Boston

William Abbott's career exemplifies the true spirit of academic medicine, mixing an acuity and passion for scientific work with a zeal for imparting knowledge to his students. As chief of vascular surgery at Massachusetts General Hospital, he is as well regarded for his teaching skills as he is for the significant contributions he has made in his field.

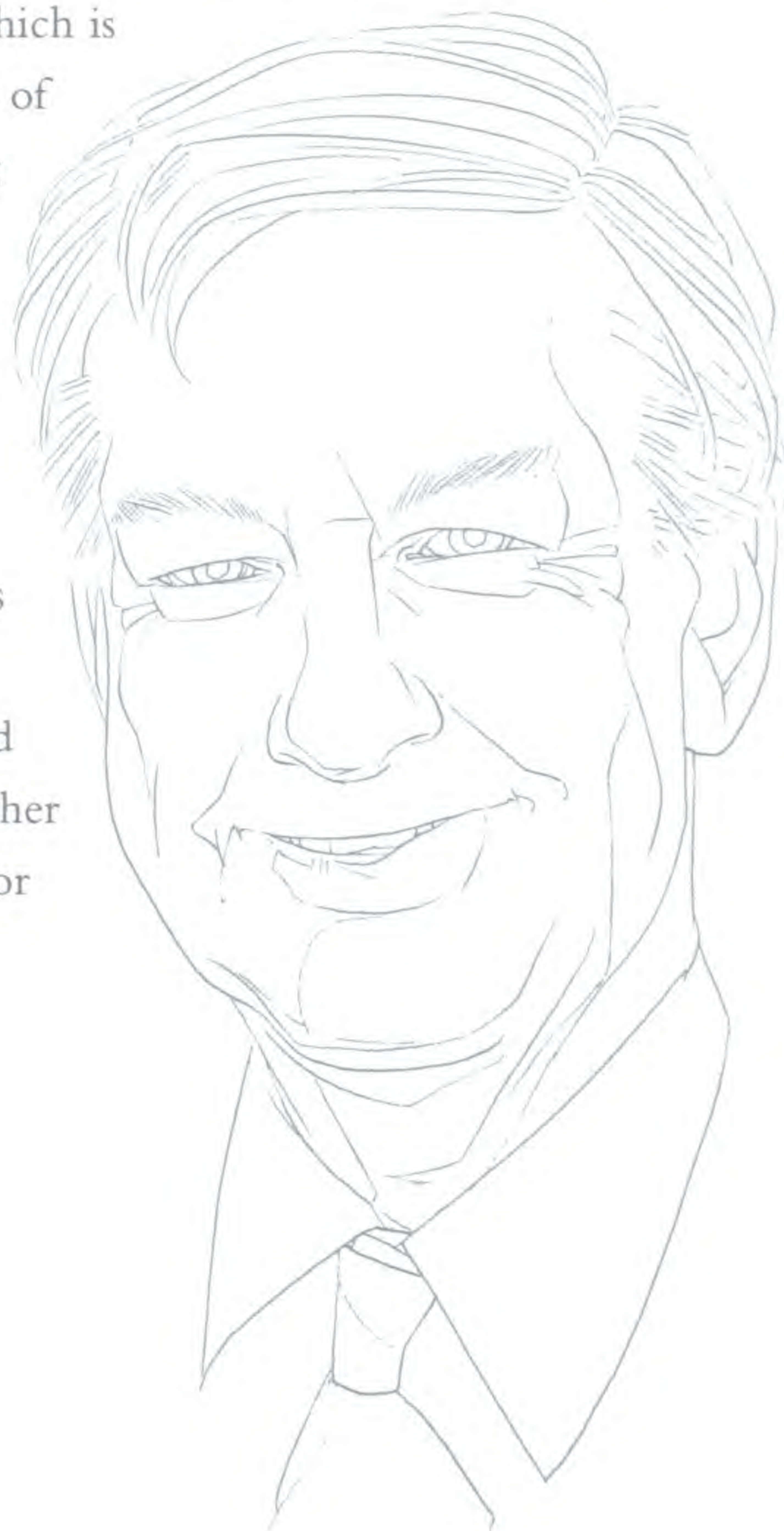
When Abbott left the Bay Area after graduation to begin a residency at Massachusetts General, he expected he would soon return. However, a year-long research project in transplantation biology extended his residency, and then the Vietnam War intervened to alter his post-training plans. Not wanting to wait for a "Greetings" letter from his local draft board, Abbott landed a position with the Navy doing research on tissue and organ preservation.

"What I most enjoy is helping a good resident do a tough case in the operating room."

The job was not as comfortable as he imagined, however. Shortly after arriving in Maryland, the newly commissioned Naval officer was asked to serve overseas. So Abbott shipped out to Da Nang, Vietnam, where he was supposed to conduct research on frozen blood; instead he spent much of his time treating casualties of the war. The base was so close to the action that the working conditions were perilous. "We had to wear sidearms, and every once in a while someone would throw a hand grenade into the hospital," Abbott says. "It really made me grow up from the guy I had been as a surgical resident."

In 1971, instead of returning to San Francisco, Abbott joined the staff of Massachusetts General, where he became a key figure in advancing the field of vascular surgery. He also helped organize one of the first training programs in vascular surgery in the country. He stayed actively involved in basic research and played a leading role in the development of the non-invasive vascular diagnostics laboratory, which is now part of accepted practice for performing physiological diagnoses of vascular disorders. But he says his "academic high point" was serving as president of the Society for Vascular Surgery in 1996.

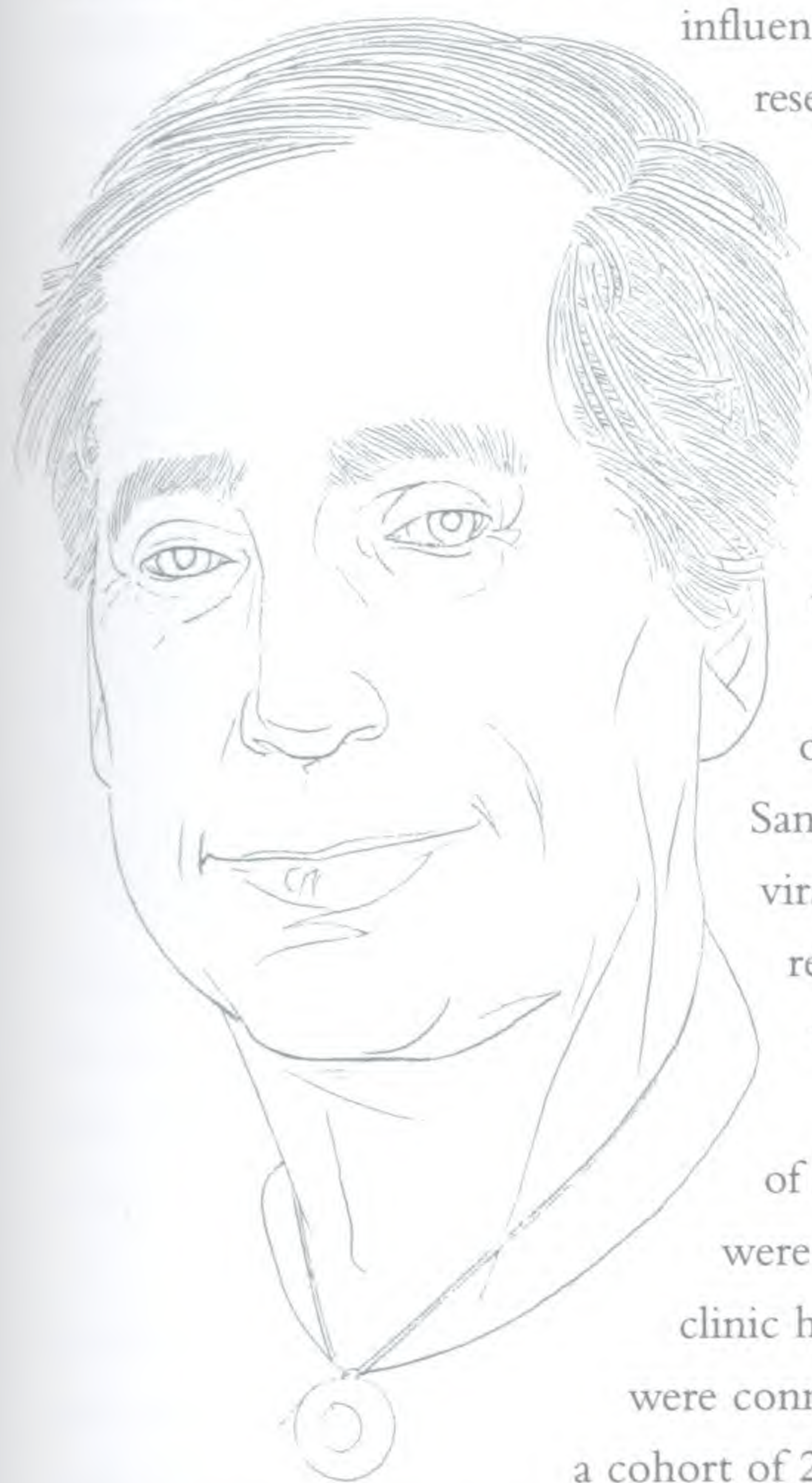
In addition to watching the field of vascular surgery develop from its infancy, one of Abbott's greatest pleasures has been training others in the field. "What I most enjoy is helping a good resident do a tough case in the operating room," Abbott says. Like most physicians in academics, however, Abbott is frustrated that he spends more and more time on meetings and paperwork — "the things we weren't trained to do" — and less time on training doctors and treating patients. "I have one meeting tonight at 7:30 and then another meeting tomorrow at 6 a.m.," Abbott laments. "We keep looking for day-stretchers, and all we find are night-shrinkers."



Donald Abrams, MD

Class of 1977

AIDS Investigator, San Francisco



Donald Abrams has always been a nonconformist. Fortunately for medicine, Abrams launched his career as a physician and researcher just as the AIDS epidemic began to sweep through susceptible populations, and the medical community needed mavericks. As an AIDS researcher who is also gay, Abrams has been an

influential force in effecting many changes in the basic tenets of medical research and practice and altering political attitudes about the epidemic.

After considering training in psychiatry, Abrams chose to pursue internal medicine, landing at the Kaiser Foundation Hospital in San Francisco in 1977. There he became familiar with ailments he had not seen much of at Stanford — including a seemingly benign problem among many gay men: persistent flu-like symptoms with swelling of the lymph nodes.

Following Kaiser, Abrams did a hematology/oncology fellowship at the University of California, San Francisco, where he began to study the possible viral causation of cancer. During this time, the earliest reports of a strange epidemic of cancer in gay men were making the news.

Abrams soon joined the clinic where some of the first Kaposi's sarcoma patients in San Francisco were being seen. Abrams noticed that many of the KS patients in the clinic had persistent lymphadenopathy, and he wondered if these cases were connected to the cases he had seen at Kaiser. Following up, he gathered a cohort of 200 patients and confirmed what he feared: Many of those patients with lymphadenopathy would go on to develop KS and other AIDS-related disorders.

Abrams began working full time at San Francisco General Hospital, becoming the resident expert on AIDS Related Complex, or ARC. In 1985, he formed the Community Consortium, which was intended to help primary care providers do clinical research on AIDS. Although the consortium has had a number of successes, such as the trial of inhaled pentamidine to fight pneumonia, Abrams was initially known as something of a "therapeutic nihilist," unenthusiastic about the earlier anti-viral drugs that pharmaceutical companies touted.

Abrams, today a professor of clinical medicine at UCSF, is also interested in testing complementary and alternative medical therapies that patients claim are beneficial — including acupuncture, Chinese herbs, and marijuana. After a five-year struggle, he recently received a \$1 million grant and 1,400 marijuana cigarettes from the federal government to test the safety and efficacy of marijuana as an adjunct therapy for AIDS symptoms.

Like many of those in the gay and medical communities, Abrams is scarred by personal tragedies and frustrated by the slow pace of research, but he also knows he and others have made progress. "It's very satisfying to be in a field that is so new and to be able to make so many contributions."

"It's very satisfying to be in a field that is so new and to be able to make so many contributions."

Lori Arviso Alvord, MD

Class of 1985

Surgeon, Hanover, NH

Growing up in the Four Corners region of New Mexico, Lori Arviso Alvord did not encounter many role models in higher education. “The Navajo community has only recently intersected with Western society,” Alvord says. When Navajo children first go to school, many have never spoken English, and when they leave, it is seldom to go off to college, she says. But during high school, she met another Native American student who was attending Princeton, and Alvord was inspired to apply to a top-ranked university herself. At age 16, she was accepted at Dartmouth.

The transition from her native Navajo land to an Ivy League environment was “the hardest part of my life,” Alvord

says. After initial academic difficulty, she began to pursue degrees in psychology and sociology. Her coursework in neuroanatomy led to a deep interest in human biology, and she applied to Stanford medical school, where she decided to specialize in general surgery. When she finished her training, she went back to New Mexico to work for the Indian Health Service.

Returning to her community, Alvord had an experience common to many who have taken a long journey — she saw things around her that she had never noticed before. As she practiced medicine among her tribe, she observed how different the Western model of medicine is from the Navajo way, and how difficult it is for Native Americans to accept and feel comfortable with Western medicine.

“The Navajo view sickness as a result of mental and spiritual imbalances in life,” Alvord says. “When a Native healer looks for the cause of sickness, he will look at where people are out of balance with the community and the world around them.” Alvord believed that if patients were distrustful and fearful they would not heal as well, so she began to look for ways to incorporate the Navajo perspective into her practice. First she made the doctors’ offices and the operating rooms as comforting as possible. Then she examined how patients interacted with those working in the clinic and found ways to enhance these interactions. She also fostered better teamwork and communication among the medical staff to improve the efficiency and effectiveness of care delivery. In the end, her approach to medicine was a convergence of Native ideals about harmony and Western ideas about total quality management.

Alvord recently wrote a book about the combination of Western medicine and traditional healing — *The Scalpel and the Silver Bear* — which sold 20,000 copies in six months. She is currently back at Dartmouth, serving as assistant professor of surgery and dean of student affairs at the medical school.



“When a Native healer looks for the cause of sickness, he will look at where people are out of balance with the community and the world around them.”

John Baldwin, MD

Class of 1975

Cardiothoracic Surgeon/Medical School Dean, Hanover, NH

John Baldwin is a model for all those who hope to become physician-scientist-administrators. Baldwin, now dean of Dartmouth Medical School, is a cardiothoracic surgeon with a stellar record of scientific accomplishments. Yet at every crossroad in his career, colleagues warned him that choosing to be an administrator would take all his time and ruin his research. "I've generally ignored such advice," Baldwin says. So far, the hear-no-evil approach has paid off.

After attending Harvard, Baldwin went to Oxford on a Rhodes scholarship and became interested in cardiovascular physiology. This interest drew him to Stanford and to heart transplant surgeon Norman Shumway. After medical school and residencies, he joined the Stanford faculty, working with Shumway on pioneering heart-lung transplants.

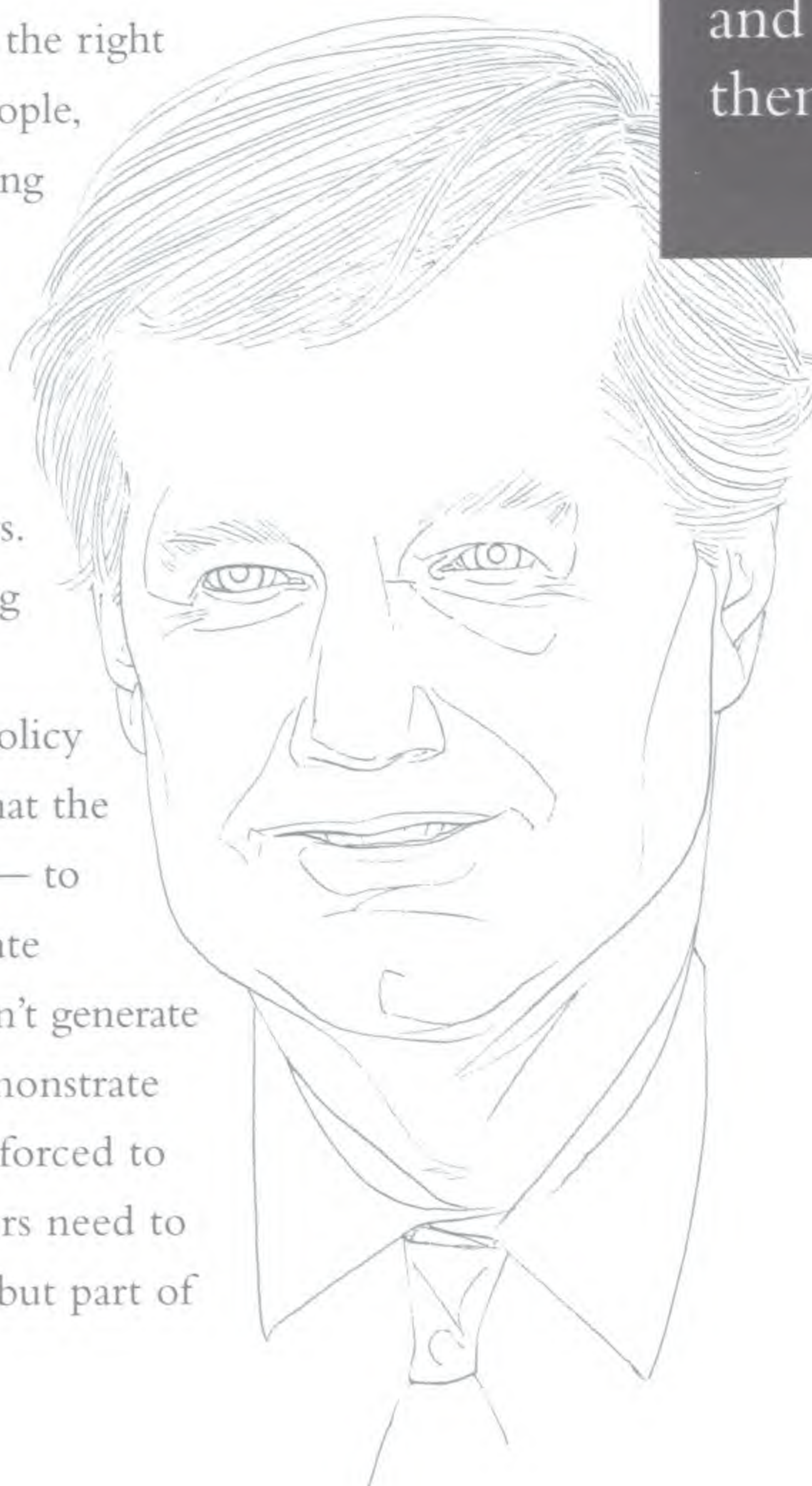
Baldwin's proudest scientific achievement was the development of a method to cool lung tissue harvested from a donor, a discovery that made it possible to transplant lungs from distant donors. Lung tissue is highly resistant to cooling because of the organ's many air pockets and its strong tendency to vasoconstrict when perfused with cold liquid. Baldwin's previous experience in cardiovascular physiology gave him the idea that prostaglandins could be used to interfere with vasoconstriction.

Baldwin left Stanford when he was asked to be chief of the Division of Cardiothoracic Surgery at Yale. Despite the demands of his new role, Baldwin was able to continue his research at Yale, as well as at Baylor College of Medicine, where he landed next. By the time Baldwin became dean at Dartmouth, he knew his research would not take a back seat to other responsibilities.

For Baldwin, the key is surrounding himself with the right people. "The fun part of administration is finding great people, putting them in a setting where they will flourish, and letting them fly," Baldwin says. With these elements in place, "it's always possible to limit the intrusion of administrative matters into other opportunities." He learned one valuable trick from Shumway, who always worked in the lab on Tuesdays and Thursdays. "Now I know why," Baldwin says. "There's always something that comes up at the beginning and end of the week."

Baldwin has also become somewhat of a health policy crusader. "Very few people in this country understand what the academic medical center is here for," he says. "Our roles — to contribute to the acquisition of knowledge, to disseminate knowledge, and to provide high-quality care — usually don't generate large profits." His biggest frustration is the failure to demonstrate effectively that academic medical centers should not be forced to "compete" as businesses. "We at academic medical centers need to take the lead in telling people that this is not a business, but part of the national health and national defense."

"The fun part of administration is finding great people, putting them in a setting where they will flourish, and letting them fly."



William Blaisdell, MD

Class of 1952

Surgeon, Sacramento

William Blaisdell entered medical school with the idea of becoming a family doctor, but he wanted to learn how to do minor surgery in case he ever needed those skills. By the time he learned how to manage all the complications of routine surgeries, he realized he had found a fascinating new career path.

After he finished at Stanford, Blaisdell went into the Navy for two years and then came back to Stanford for a surgical residency. During his training, he went to Boston for a year and began working with a physician who was establishing a vascular surgery unit. Blaisdell soon became interested in the field as well. He returned to Stanford and finished his residency in 1959, serving as the last chief resident at the school's San Francisco hospital. When Stanford moved the medical school to Palo Alto, he stayed in the city, eventually joining the faculty of the University of California, San Francisco.

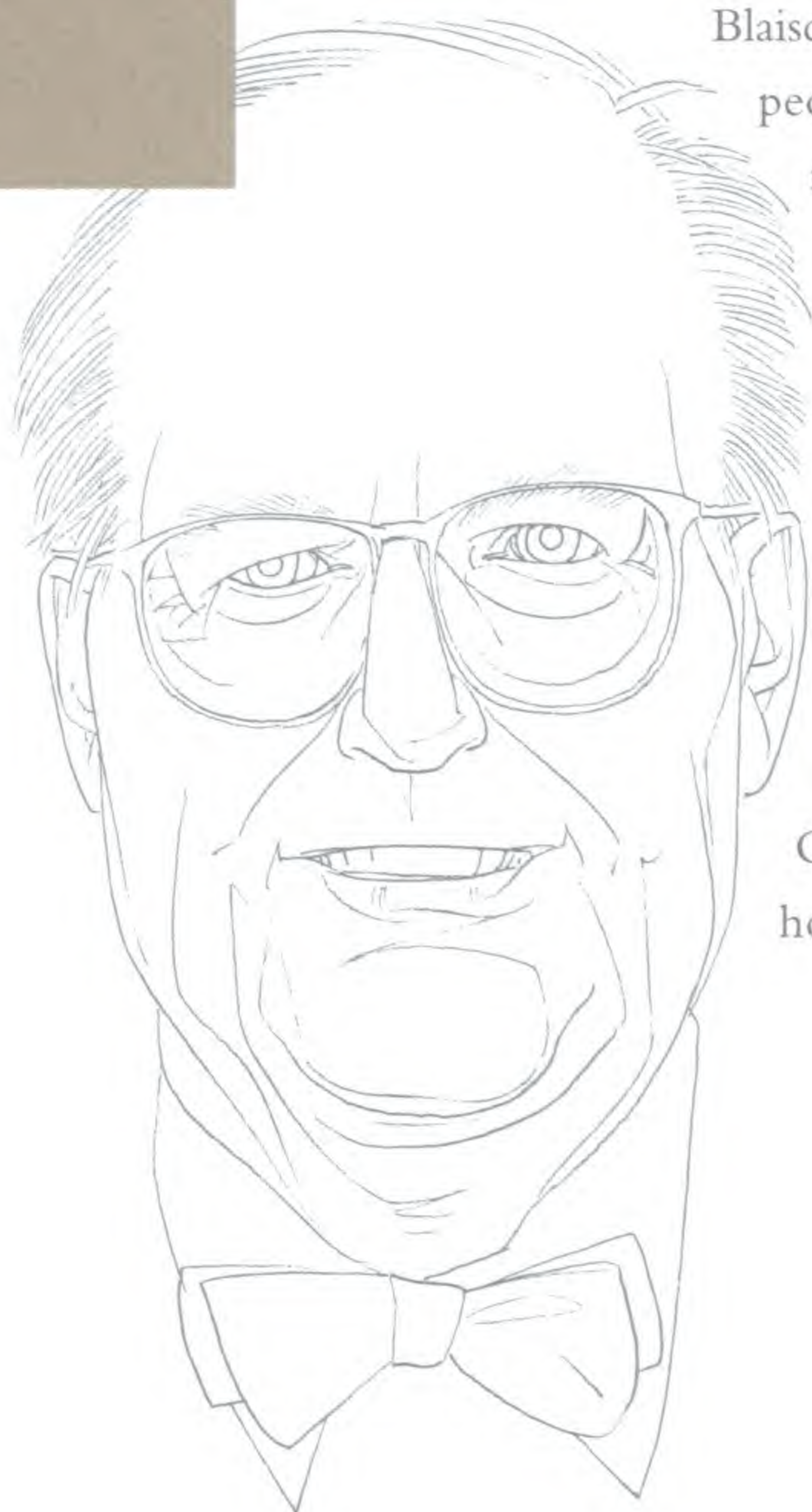
At UCSF, Blaisdell became known for his research in cardiovascular surgery. One of his more innovative ideas was putting in a fistula — a sort of “short circuit” connection between an artery and vein — to keep a vascular graft alive. He also demonstrated that a vascular bypass from the arm to the legs could keep the lower half of the body viable in patients who had an infection or some other problem that temporarily halted blood flow to the abdomen. In addition, Blaisdell contributed important findings on the cause and treatment of respiratory distress syndrome.

From 1966 to 1978, while still a UCSF professor of surgery, Blaisdell was chief of surgery at San Francisco General Hospital. There he played an instrumental role in organizing trauma care. Blaisdell says it was during the turbulent 1960s that an organized response to trauma became necessary. “The peace protests inflicted trauma on people, and more kids were killed on our streets from drugs during that period than were killed in Vietnam,”

Blaisdell says. The doctors at San Francisco General discovered that people were dying from treatable conditions because they were not getting to doctors quickly enough. With his leadership and the support of a federal grant, San Francisco General became the first hospital in the country to implement a coordinated system of trauma treatment — from the ambulance crew's response to emergency room procedures.

In 1978, Blaisdell left UCSF to become chair of the surgery department at UC Davis. Although he retired in 1996, he continues to work at Davis as chief of surgery for the Northern California Veterans Administration Health Care System. His current project is to open a new VA hospital in Sacramento.

“It’s interesting that some physicians think of me for cardiovascular surgery and others know me as the father of trauma organization.”



Sharon Bogerty, MD

Class of 1973

Cardiac Surgeon, San Jose, CA

As a chemistry major in college, Sharon Bogerty knew she wanted to go on to either medical school or graduate school. A critical part of her decision-making was getting insights from lots of people. "I noticed that people in medicine were very happy in their later years," Bogerty says. "This was especially true for

surgeons." That observation clinched her decision, and she

applied to Stanford medical school.

Once she got to Stanford, she discovered that very few women were working toward a medical degree. "There were two women

in my medical school

class, and nobody was

there cheering us on,"

she says. The difficulties

women faced were

particularly tough in the

male-dominated field of

surgery, Bogerty says. But

she believes some of those

hurdles were a necessary part

of surgical training. "You want

surgeons to be tough, to be able to

stick with it when the pressure is on — like a

quarterback who can complete the pass in the face

of rushing linebackers," she says. In the end, Bogerty

had no problem proving herself in either skill or stamina.

Bogerty became interested in cardiac surgery when she studied

under Norman Shumway, a noted heart surgeon at Stanford. She says

Shumway always set a positive example for medical students and "fostered a real camaraderie in the

department." After an internship in Colorado, she came back to Stanford to do residencies in general surgery

and cardiac and thoracic surgery.

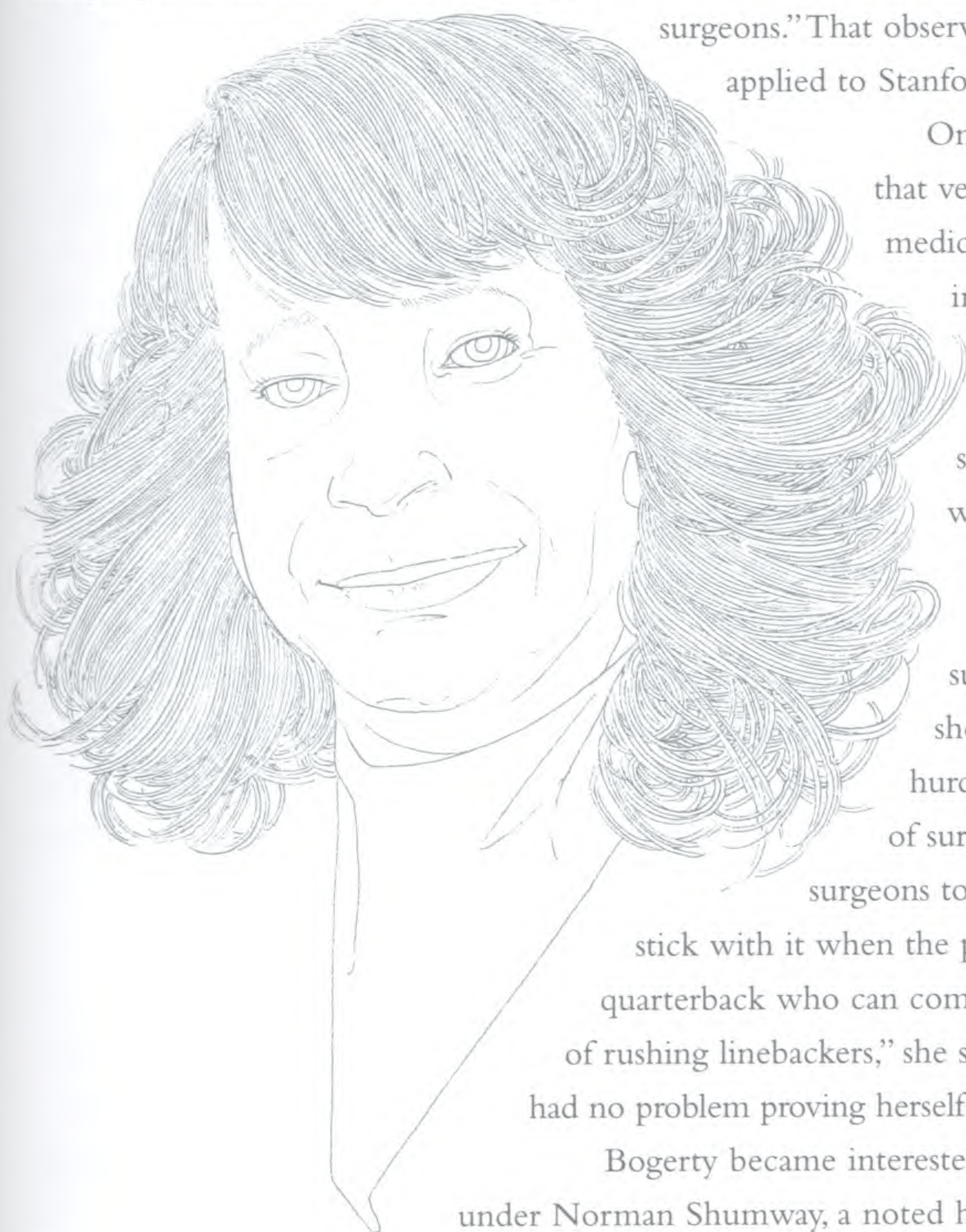
When she left Stanford, Bogerty set up a private practice at O'Connor Hospital in San Jose. There

she has enjoyed the satisfaction that she heard about years ago when she was making her career decision.

"I continue to enjoy what I do," says Bogerty, who is now chair of the Department of Cardiovascular Services at the hospital.

Bogerty also has derived great satisfaction from participating in professional and philanthropic organizations. She has been president of the San Jose Surgical Society and the South Bay American Medical Women's Association and was a governor on the board of the Stanford Medical Alumni Association. She is currently on the board of the American Red Cross and was recently honored by a local public television station as one of the "outstanding people of the year" for helping to organize the Heart Association's annual luncheon on women and heart disease.

"You want surgeons to be tough, to be able to stick with it when the pressure is on — like a quarterback who can complete the pass in the face of rushing linebackers."



William Brody, MD, PhD

Class of 1970

University President, Baltimore

William Brody did not move straight through the academic ranks to his post as president of Johns Hopkins University. In the years between medical school and his current position, Brody worked in both industry and academia, gaining experience as an inventor, entrepreneur, educator, and medical school leader — versatility that has served him well as a university president.

Brody came to Stanford with a B.S. and M.S. in electrical engineering from Massachusetts Institute of Technology. After completing his M.D. and Ph.D. in electrical engineering and doing postgraduate training in cardiovascular surgery and radiology, he joined the Stanford faculty. Working in the Department of Radiology, he began to focus on developing new imaging technologies. When magnetic resonance imaging (MRI) was being refined in the early 1980s, Brody and other faculty members launched an effort to design an MRI machine that used more convenient, non-superconducting magnets. They formed a company to build the machine, and the investors asked Brody to become the CEO. “I took what I thought was a year’s leave of absence to set up the new company,” Brody says. But after two years, he decided to devote himself full time to the new enterprise.

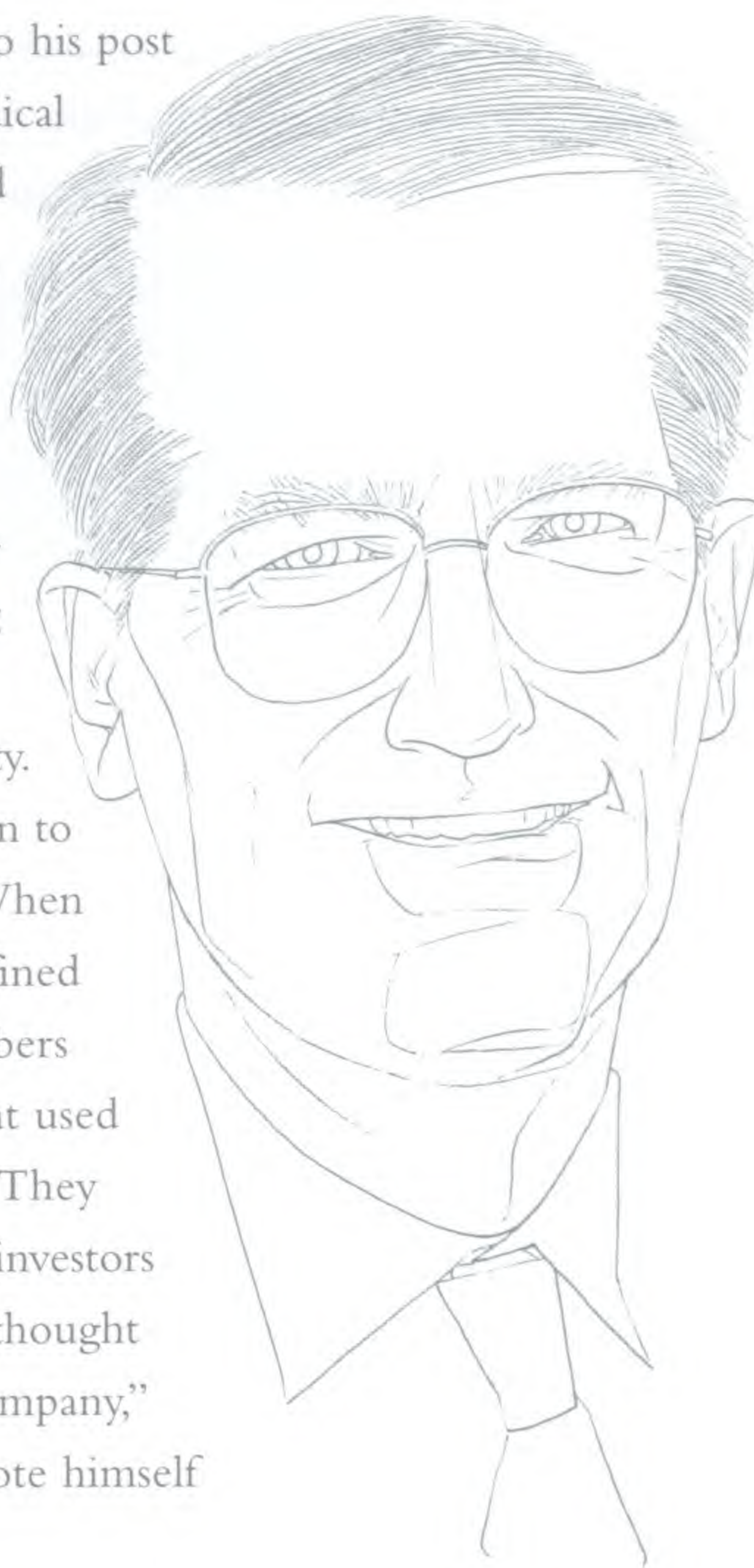
For some, such a move to the private sector might have meant an end to a career in academia, but for Brody, the experience only seemed to enhance his credentials. In the mid-1980s, medical school leaders at Johns Hopkins began to woo him, and finally in 1987, Brody accepted the position of chair of radiology.

Soon after arriving at Hopkins, Brody became concerned about the school’s financial outlook and was appointed to the university’s financial committee. His insightful contributions to the group led to his appointment as chair of the committee.

In 1994, Brody was lured away from Hopkins by the University of Minnesota to become provost of its Academic Health Center. But when the president of Johns Hopkins left two years later, Brody was invited to return to Baltimore to fill that post.

When Brody reflects on his early career, he says that while he enjoyed the fast-paced exhilaration of being part of a business start-up, he “lacked the satisfaction of knowing I was helping a lot of people.” Now his greatest pleasure is watching bright students flourish in the university. “I liken it to the feeling of pride you get when your children do something great; now I have 4,000 children,” he says.

Brody says he also loves the energy and diversity of the university environment. “The only frustration is that you are like a bee that flits from flower to flower,” he says. “Sometimes you want to linger on something, except someone is telling you it’s time to get on to your next appointment.”



“In my job, one day you are entertaining a head of state and the next you are answering e-mail from a parent who is upset about mice in the dorm rooms.”

Linda Hawes Clever, MD

Class of 1965

Chair, Occupational Health, San Francisco

For Linda Hawes Clever, work, personal life, and health are tightly interwoven, like the warp and weft of cloth. As chair of the Department of Occupational Health at California Pacific Medical Center in San Francisco, Clever is responsible for preventing and treating work-related problems. It is a position that has taken her out of the confines of normal medical practice.

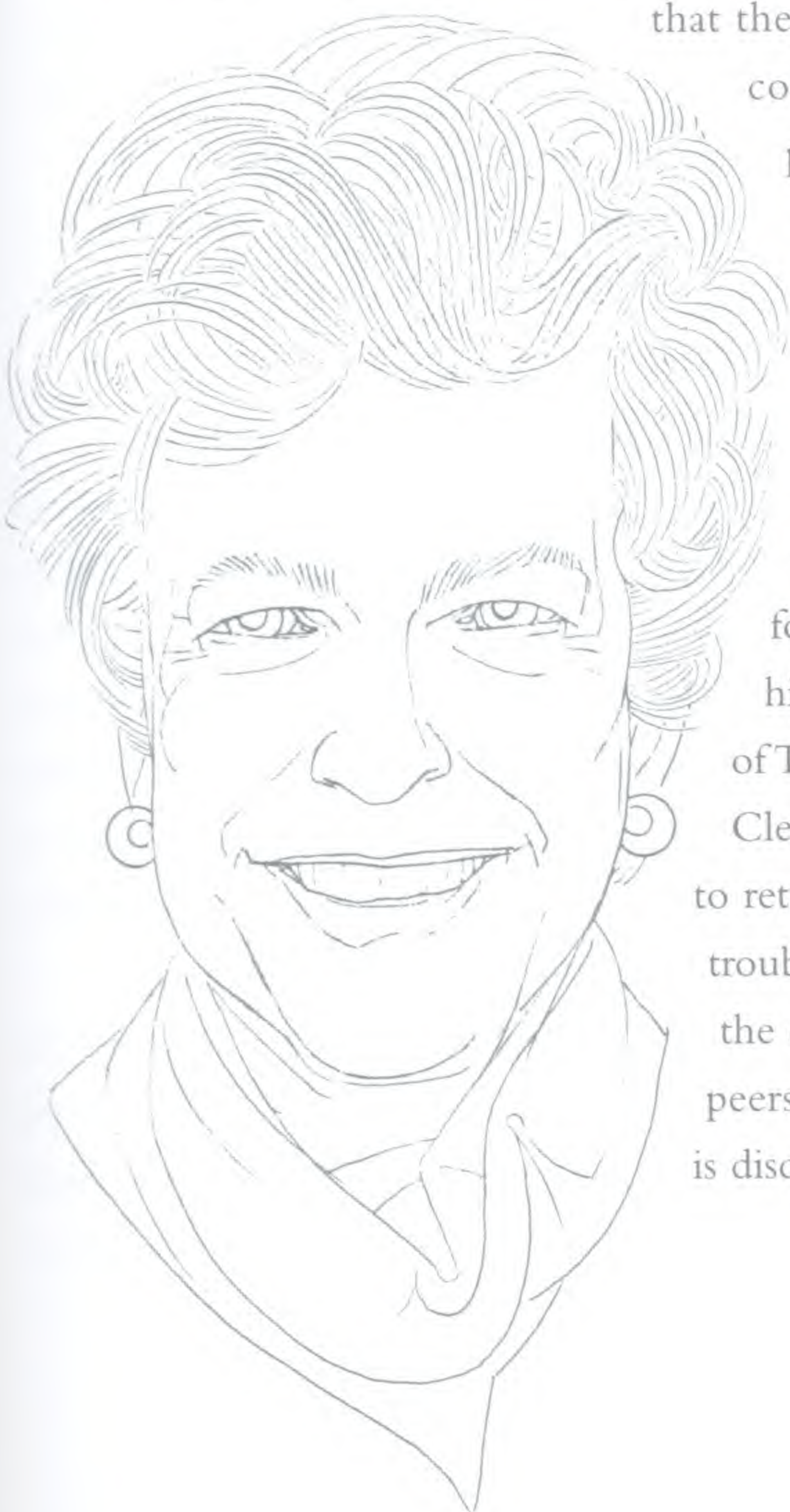
“I’ve climbed over the side of the Golden Gate Bridge to see if riveters were wearing their hearing protection. I’ve gone to the top of buildings to look at how window washers work. I’ve seen the pressures of the executive office as well as those of the boiler room.” What Clever has discovered is that dealing with occupational illness and injury requires understanding the whole of people’s lives — how people do their jobs and live their lives, while healthy as well as while sick.

Following medical school at Stanford, Clever did her residency and fellowship in medicine at Stanford and the University of California, San Francisco, where she was the first community health fellow in the United States. There, Clever had the opportunity to explore health and sickness all over San Francisco. On any given day, Clever might have made house calls in Haight-Ashbury or traveled to Hunter’s Point to teach urgent care to home health visitors. “That was a year that changed my life,” Clever says. She notes that she saw vividly the connection between the way people lead their lives and the health issues that affect them.

Clever strives to maintain the same balance in her own life that she advocates in her work. She and her husband, Jamie, pursued medical and community service careers while raising a daughter, who herself is now training in internal medicine. Clever believes that they were able to do all this because of strong commitment to their family and a tripartite principle: “Negotiate, accommodate, and recreate.” Clever also feels lucky that she has been blessed with “a fairly large bucket of energy, with very few holes.”

In addition to teaching, practicing medicine, and editing the *Western Journal of Medicine*, Clever has chaired a variety of community groups, including serving on the board for a public radio station and the boards for her university and high school. She has also served on the Stanford University Board of Trustees and the Stanford Medical Alumni Association board. Clever and others are now starting an organization called RENEW! to return a sense of higher purpose to medical professionals. She is troubled to witness the forces pulling the profession apart and to see the discouragement and disillusion that has resulted among her peers. As a “board-certified optimist and community builder,” she is discovering potent ways to deal with these troubles.

“I began to understand that there is a great deal of interaction between health and people’s everyday lives.”



Frances Conley, MD

Class of 1966

Neurosurgeon, Palo Alto

Frances Conley describes herself as someone who works hard, talks fast, and is very competitive. These characteristics helped her break through numerous barriers en route to the top of her field — neurosurgery. Although Conley is well known for instigating a discussion of the “boys’ club” atmosphere in surgery, in professional circles she is most widely recognized for her skills as a surgeon and academic leader.

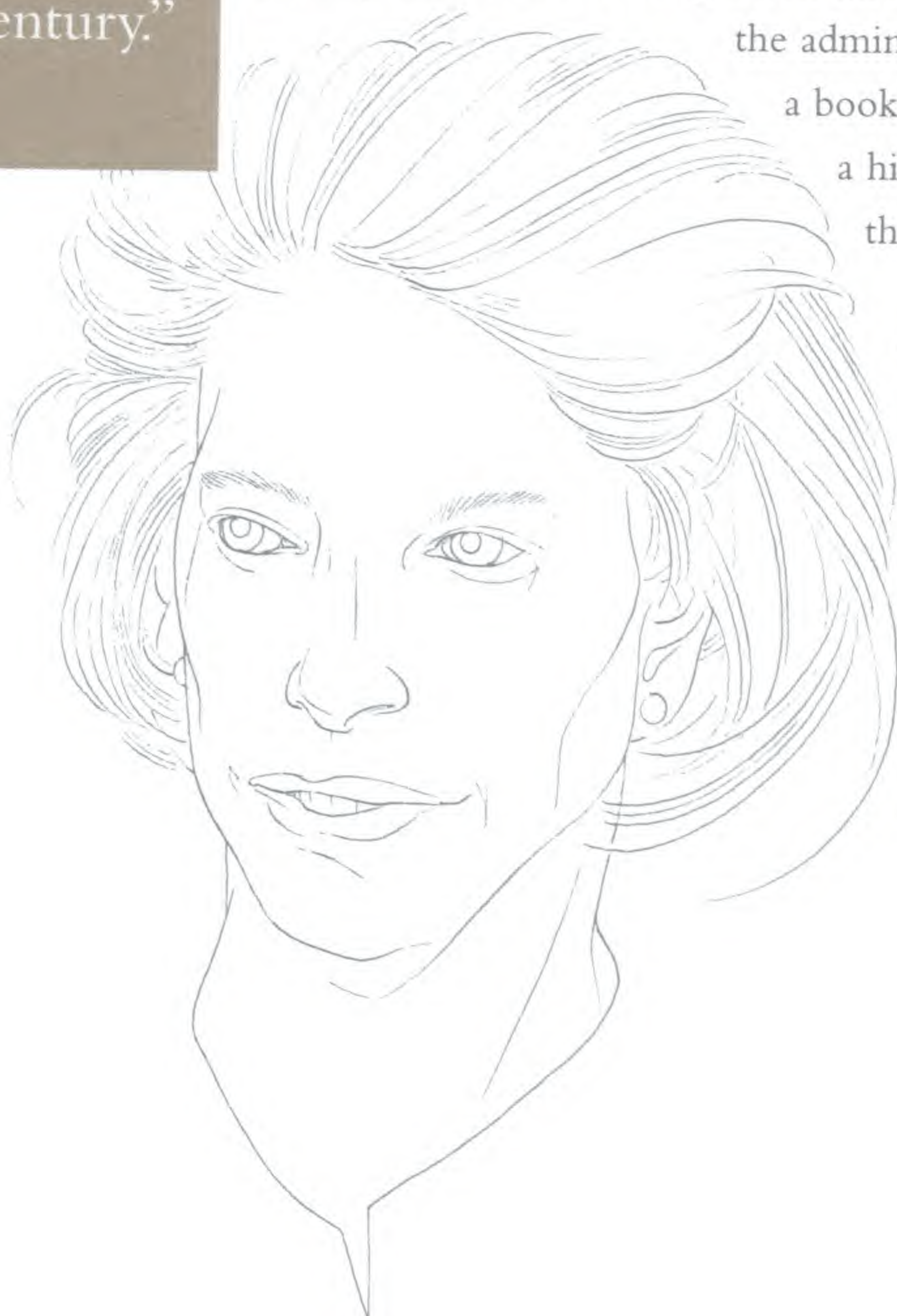
Conley has no idea why as a teenager she decided to be a doctor, but once she made that decision, she pursued the goal in her typically driven manner. She attended medical school at Stanford and loved surgery. When she began her internship, she planned to specialize in plastic surgery but found it lacking in intellectual challenge. Instead, she did her residency in neurosurgery, and on completion took a job at the Palo Alto Veterans Affairs hospital.

At the same time, she joined the Stanford faculty as an assistant professor and was elected chair of the medical faculty senate, a post that provided important information, she says. “By looking at papers for appointments and promotions, I learned what it took to work your way up the ladder.” So she established a research laboratory to explore immunotherapy of brain tumors. Her work made an impression on school administrators, and, eventually, she became the first woman in the country to be appointed tenured full professor of neurosurgery.

In 1991, however, troubled by the sexism she saw in her department, Conley resigned from the faculty and wrote an editorial about the barriers women faced in medicine at Stanford. Her editorial and the ensuing controversy in her department sparked a national discussion about equity issues across campus and at other institutions. Conley withdrew her resignation three months later, citing positive steps being taken by the administration. Later she chronicled her experiences in a book titled *Walking Out on the Boys*. “I wanted to leave a historical perspective of how women were treated in the profession,” Conley says.

Today Conley is the chief of staff at the Veterans Affairs Palo Alto Health Care System, where she directs medical, dental, nursing, and professional staffs at three hospitals. She also recently served as chair of the faculty senate for the university. She says that these leadership roles have been gratifying because she has been able to contribute to the future direction of medical education and practice.

“I wanted to leave a historical perspective of what academic medicine was like for women at the end of the 20th century.”



William P. Creger, MD

Class of 1947

Hematologist, Palo Alto

To many former medical students, William Creger is legendary for his lectures, especially his readings of Sherlock Holmes. Creger, who claims to “know Sherlock Holmes stories as well as some people know the Bible,” used the tales to teach students to use their powers of observation. More important, Creger says,

the stories help cultivate good communication skills because they depict Holmes talking to people in a way that gets them to share information they might not want to reveal.

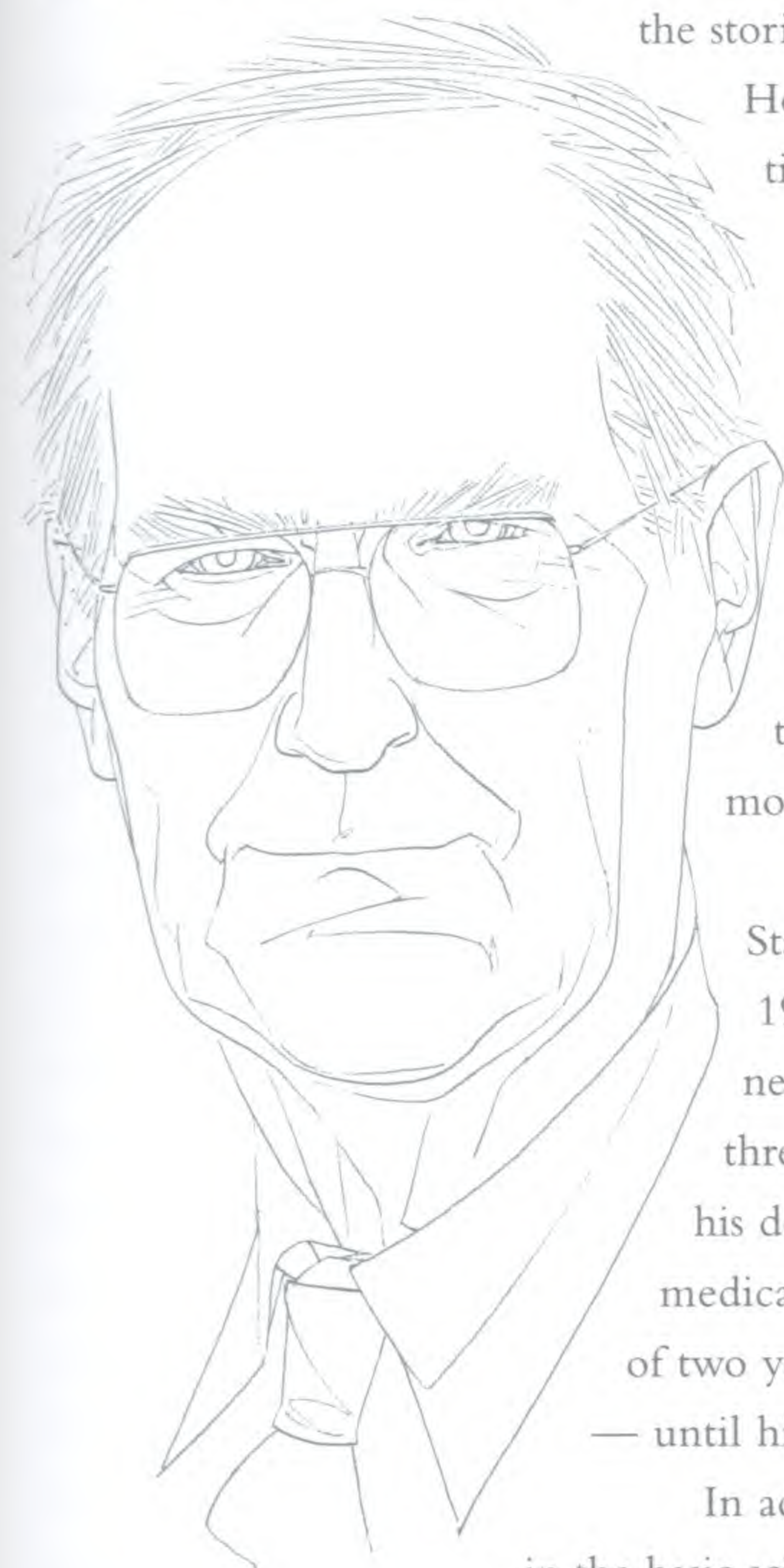
Reading fiction to medical students is only one example of Creger’s unusual approach to medical education. He has been a driving force in shaping the Stanford curriculum — one of the innovators who, in the 1950s, pushed for changes in how medicine was taught across the nation. Creger and others at Stanford believed the school had an outdated curriculum that was overly clinical and needed to encompass more of the emerging basic and social sciences.

Creger grew up in San Francisco and went to Stanford as an undergraduate. When he finished in 1943, the world was in the middle of a war and in need of doctors, so he enrolled in the war-shortened three-year Stanford M.D. program. After earning his degree, Creger began teaching hematology at the medical school and did not stop — with the exception of two years in the Army doing research on tuberculosis — until his retirement in 1992.

In addition to his efforts throughout the years to broaden education in the basic sciences, Creger is also a great believer in clinical experience and clinical instruction. “I have this wild idea that it is hard to teach medicine if you aren’t practicing it,” he says. When put in charge of student education in the Department of Medicine at the medical school in 1978, Creger again pushed to expand medical students’ education. “At the time, students were only seeing patients at the Veterans Affairs and Stanford hospitals, which meant they were mostly seeing males at the one hospital and too many cases of leukemia at the other,” Creger notes. Following his reforms, students started seeing patients at Kaiser and Santa Clara hospitals as well, exposing them to a more diverse patient and teacher population.

Since his retirement, Creger has stayed involved with the medical school and sees patients and does some teaching every week. With a self-acknowledged “acerbic tongue,” Creger continues to needle and push for change. His current concern is one foremost in the minds of many academic physicians: ensuring the long-term stability of teaching hospitals. “The main dereliction of medical schools now is that they have not formulated and sold to the public what we have to do for medical education in this country,” he says.

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Mark DeAntonio, MD

Class of 1982

Adolescent Psychiatrist, Los Angeles

Mark DeAntonio feels like he prepared his whole life to be a psychiatrist. With a father who was a child psychiatrist and a mother who was a psychiatric social worker, it was no surprise that DeAntonio became interested in adolescent psychiatry. His long-term devotion to the field has paid off. He has helped lead a revolution to change the way young adults are treated. As a professor at the University of California, Los Angeles, he has had great success in melding treatments from rival therapeutic camps and in keeping adolescent psychiatric inpatient wards operating despite pressures to cut costs.

During medical school, DeAntonio was unique among

his classmates in declaring early on that he would be a psychiatrist. After graduating from Stanford, DeAntonio did his adult psychiatry training at Yale and went to UCLA to train in child psychiatry, where he has stayed since finishing his training in 1987.

According to DeAntonio, the mid-'80s were a time of important change for the field. For decades, the psychiatric community was split into two, often competing, camps: those who treated patients with drugs and those who used psychotherapy. For the most part, the two groups kept to themselves, shunning the other method. In the 1980s, however, researchers began to understand the biological underpinnings of mental illness and to show that pharmacological and psychotherapeutic approaches could work successfully in

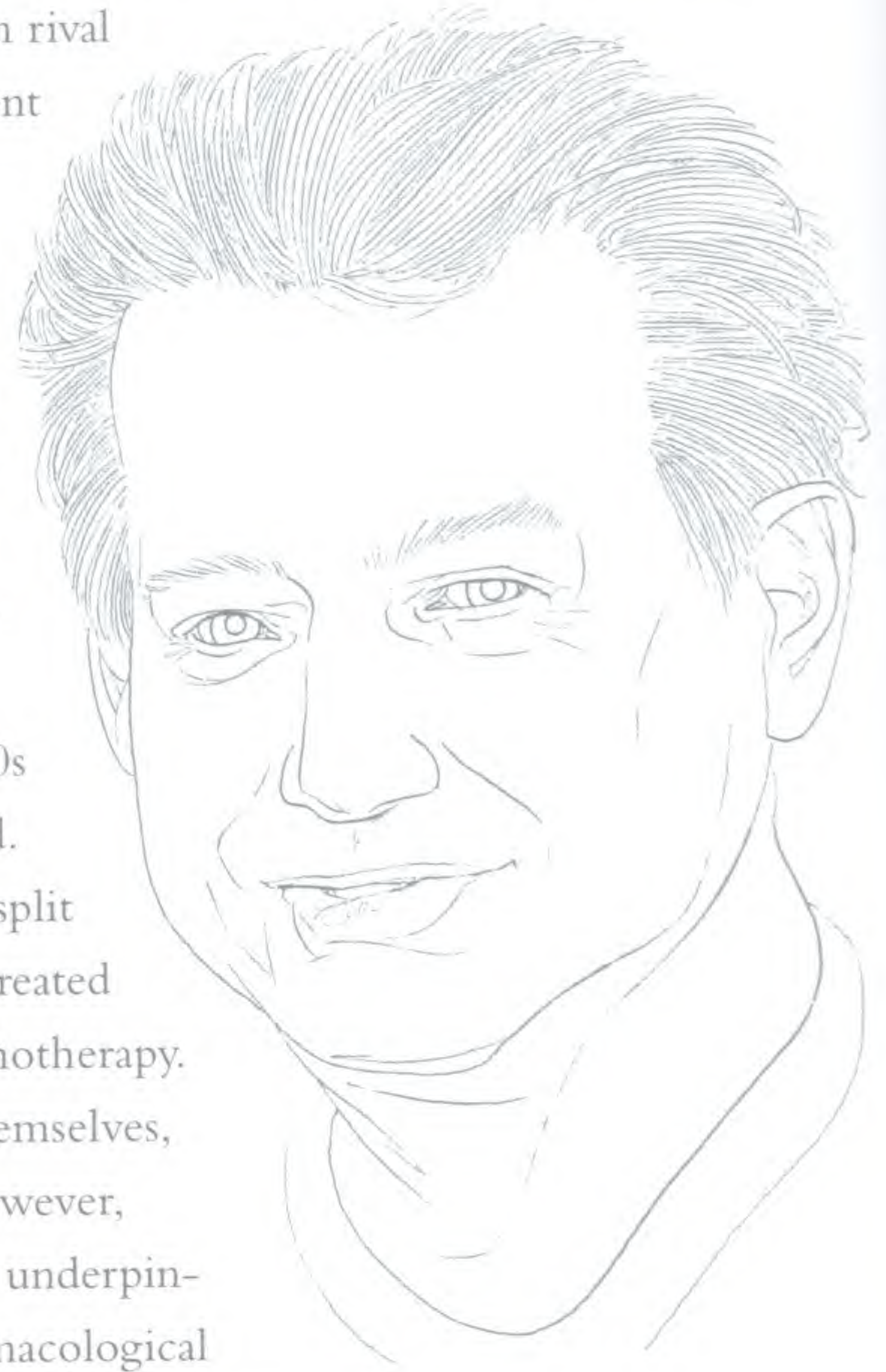
combination. At UCLA, DeAntonio was an articulate and strong leader who was able to bring together dogmatically opposed factions and change the way patients were treated.

"It used to be that a 16-year-old admitted for depression would be given the standard treatment for depression," DeAntonio says. "Now we evaluate if the depression is caused in part by drugs or alcohol problems, family problems, or other psychiatric disorders, and then create an individualized treatment."

One of DeAntonio's greatest challenges, and one of his sources of greatest pride, has been keeping open UCLA's adolescent inpatient services in an age of managed care and cost containment. DeAntonio says to accomplish this, he has had to press nurses, social workers, and others to find creative solutions to problems and simply not give up.

Perseverance also characterizes his approach to treating patients. "My greatest pleasure is to be presented with an adolescent with issues that are completely overwhelming and to make them understandable and manageable," DeAntonio says. For example, he says it is very rewarding to have "a 15-year-old girl who is mildly developmentally disabled, anorexic, and showing onset of schizophrenia, and to be able to improve things so that residents say, 'I can't believe we fixed that situation,' and the parents say, 'Thank you for helping my kid.'"

"My greatest pleasure is to be presented with an adolescent with issues that are completely overwhelming and to make them understandable and manageable."



Michael R. DeBaun, MD

Class of 1987

Pediatric Hematologist, Oncologist, and Epidemiologist, St. Louis

Michael DeBaun chose to specialize in pediatric hematology oncology because he wanted to help children. Through his career, he has provided relief and hope not only to children with sickle cell anemia and cancer but also to dying children and their families.

DeBaun's original plan was to become a community pediatrician. But after finishing Stanford medical school, he began to see that he could have a broader impact through academic medicine and clinical research. DeBaun finished his pediatric residency, chief residency, and pediatric hematology oncology fellowship at Washington University School of Medicine in St. Louis. He later completed a fellowship in epidemiology at the Johns Hopkins School of Hygiene and Public Health and the National Cancer Institute. Now an assistant professor of pediatrics and biostatistics at Washington University, DeBaun believes he has "the best of both worlds," conducting research on sickle cell disease and cancer, while providing care for children with those disorders.

Sickle cell anemia is a painful and debilitating disease that sometimes leads to stroke in young children. "Little is known about the risk factors for stroke, particularly silent strokes, which occur in approximately 18 percent of children with the disease," says DeBaun. He has been working on the epidemiology of silent strokes since his hematology oncology fellowship and was recently awarded the Doris Duke Foundation Clinical Scientist Award to continue his research.

In his oncology research, DeBaun has been studying children with genetic disorders that lead to cancer. He is the principal investigator of two large registries, the Beckwith-Weidemann Syndrome Registry and the Shwachman Diamond Syndrome Registry. For both registries, DeBaun has put together a multidisciplinary group of researchers who are trying to understand the best strategies for delivering medical care and to determine exactly why these children are genetically predisposed to cancer. DeBaun believes that understanding the biological basis of cancer predisposition syndromes could provide important clues about why children get cancer.

DeBaun says he feels grateful that he is able to help children with life-threatening diseases. But equally important is his role as the medical director for the pediatric hospice program. "The death of a child is such a monumental process. The end of the life of a child is a period that the families will relive in their minds thousands and thousands of times, and to be able to guide the family through this passage is very fulfilling."

"I learned in medical school that becoming a clinical scientist would provide the best opportunity for me to make a contribution to the community."



Jacob Eapen, MD, MPH

Residency Class of 1993

Pediatrician, Fremont, CA

When Jacob Eapen speaks of the need for worldwide advances in pediatric medicine, he is not talking about the latest imaging technologies or micro-robots, but of inexpensive tools like vaccines, sterile IV solutions, and pure water. "Most of the things that kill kids all over the world are diseases we already have simple treatments for but don't use," says Eapen.

Eapen's zeal for addressing world health problems derives in large part from seeing so many of those problems first-hand. Eapen was raised in India and received basic medical training there before working as a pediatric consultant in Tanzania and Nigeria. He then went to the University of California, Berkeley, to get a master's degree in public health and to Stanford for additional training in pediatrics.

Since then, he has continued to work around the globe for the United Nations and the U.S. Agency for International Development.

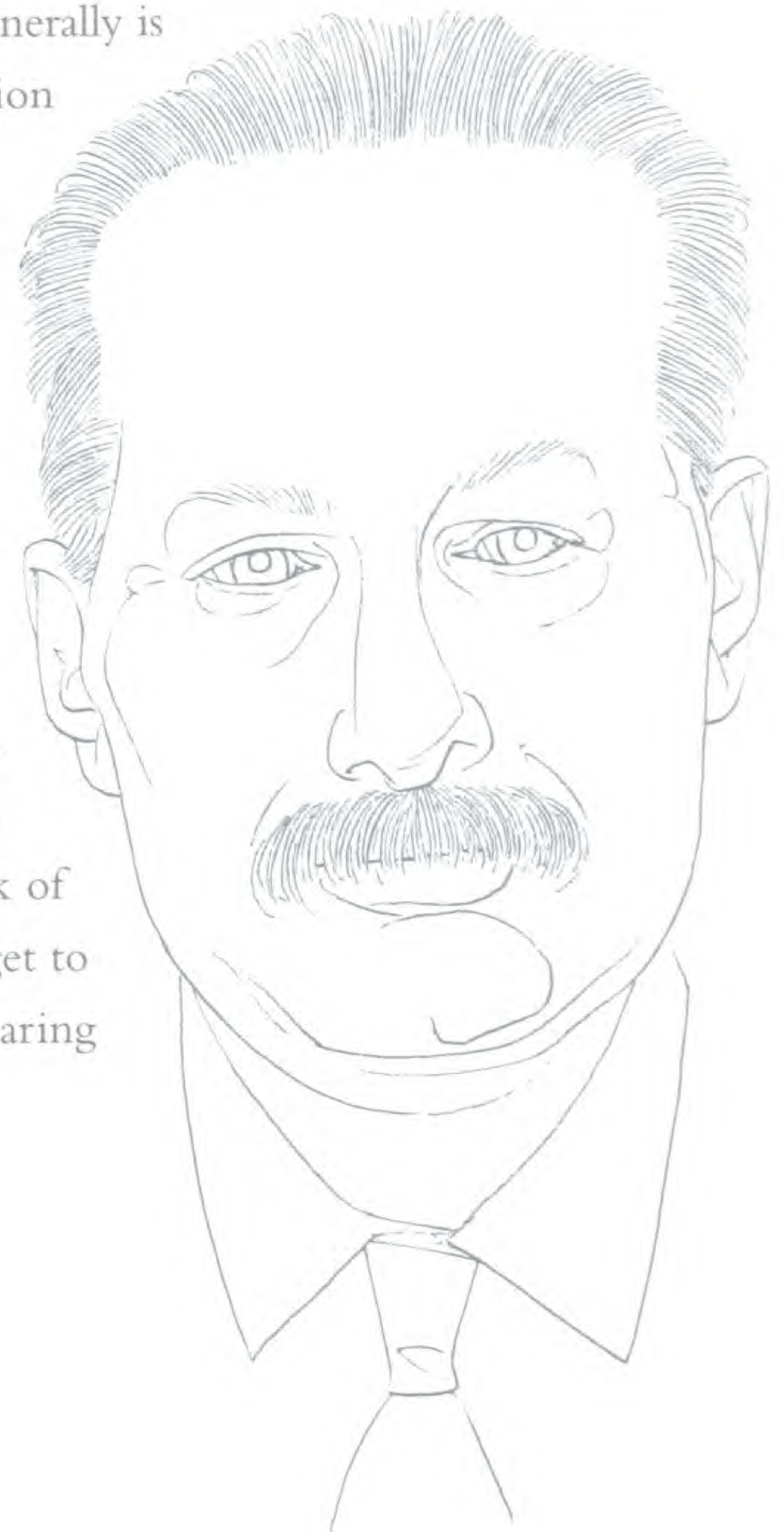
Eapen's background and temperament seem well-suited for international health work. In addition to his multinational medical experience, Eapen speaks nine languages. He also has a restless impatience with the lack of concern about global health issues among developed nations, especially the United States. "The world has advanced tremendously technologically but advanced very little in terms of compassion," Eapen notes.

One of the jobs that has given him the greatest pleasure was serving as a health advisor to the United Nations High Commission on Refugees in the Philippines in 1988 and 1989. In that post, he helped ameliorate the suffering of over 45,000 refugees, most of whom were Cambodian or Vietnamese.

Underlying all of Eapen's work, is the belief that the most straightforward and effective way of helping the world's children and attacking poverty generally is to improve public health. He says he is heartened by recent multibillion dollar donations to help improve universal medical care.

While he continues to be an advocate for global health issues, Eapen is making important inroads in the international communities of California. As a pediatrician and public health commissioner for Alameda County, he sees people from Bosnia, Yemen, Vietnam, and other centers of international conflict. Most of these patients still live in poverty, although they are in a land of plenty. One of the common threads that ties together his international work and his job in Alameda County is the way that poverty trickles down into every aspect of health care. "Children may have a discrete medical problem, but treating them can be complicated by poor hygiene, lack of vaccinations, and the fact that their parents have no car and cannot get to their physician," he says. For Eapen, the fundamental challenges of caring for underserved children are the same all over the world.

"The world has advanced tremendously technologically but advanced very little in terms of compassion."



Laura Esserman, MD

Class of 1991

Surgeon and Radiologist, San Francisco

Laura Esserman was in her fourth year of residency when she arranged for a Stanford business school professor to give surgical grand rounds on the topic of the impact of managed care on the practice of medicine. In a discussion following the lecture, he encouraged her to go to business school.

In her studies at the Stanford Graduate School of Business, Esserman says she began to understand how organization and economics drive an enterprise. “What I learned was how to use information to help people,” Esserman says. Now an associate professor of surgery and radiology at the University of California, San Francisco, Esserman is integrating research into day-to-day clinical operations,

reorganizing multidisciplinary services to meet patients’ needs, and developing a program of collaborative care to engage patients in the decision-making process with their doctors. “The fact is that the organization of care can affect the quality of care as much as medical treatments,” she says. “Medical care improves when it is a collaboration between doctor and patient.”

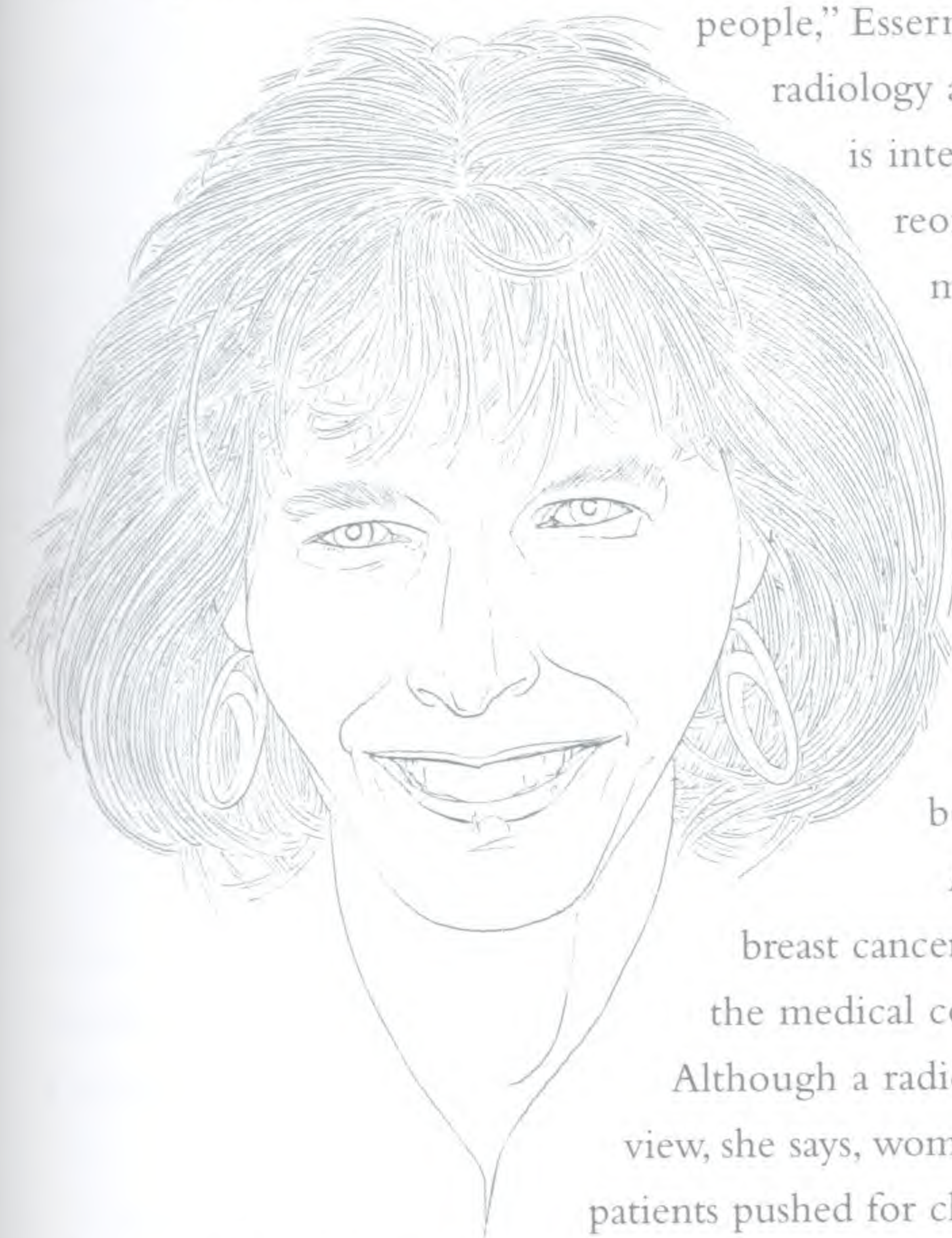
A breast cancer specialist, Esserman sees breast cancer as a good model for how patients and the medical community have worked together to improve care.

Although a radical mastectomy is effective from a technical point of view, she says, women wanted alternative, less debilitating options. When patients pushed for change, physicians developed a variety of new approaches that were less invasive but were as effective therapeutically. Esserman believes that more progress can be made in refining treatments to meet patients’ needs. “Patients are clamoring for less toxic approaches to cancer therapy — such as vaccines.”

At the UCSF Breast Care Center, Esserman is trying to understand and change interventions based on how individual patients react both physically and psychologically to therapies. She believes that collecting and analyzing data and outcomes on every patient and having that information available in a database will enable patients and their doctors to be better informed when making treatment decisions. “The future lies in designing and tailoring treatments to individual molecular profiles,” she says. “The goal is to be able to say to patients, ‘These are the possible treatment options, and this is the response of people like you, and these are the risks.’”

Esserman remains concerned about how medical administrators and practitioners can overcome the obstacles created by a focus on reimbursement rather than quality. One critical problem, she says, is that physicians in HMOs are often evaluated on their productivity — how many patients they see or procedures they perform in a day. “We should be trying to measure our progress in fighting disease and improving patients’ lives,” Esserman says. “To improve the system, we need to integrate quality management.”

“We should be trying to measure our progress in fighting disease and improving patients’ lives.”



Sheri Fink, MD, PhD

Class of 1999

Emergency Medicine Resident, Boston

When Yugoslavia broke apart in the early 1990s, Sheri Fink was deeply absorbed in her eight-year effort to acquire an M.D. and a Ph.D. in neuroscience. But the atrocities in Bosnia caught her attention. In 1993, Fink and some fellow students started the national nonprofit organization Students Against Genocide to raise awareness about war crimes in the Balkans and elsewhere.

After the Bosnian war ended, she

combined her interests in the region and medicine by helping to plan a conference on medicine and war at the University of Sarajevo and interviewing

doctors who had practiced during the Bosnian war. The experience caused her to think more

deeply about ethical dilemmas inherent in practicing medicine — dilemmas amplified during

wartime but also present during peacetime and at home. Fink landed a grant from the University of California, Berkeley, to write a book

about medicine and war in the Balkans, and she spent a year in the region doing research.

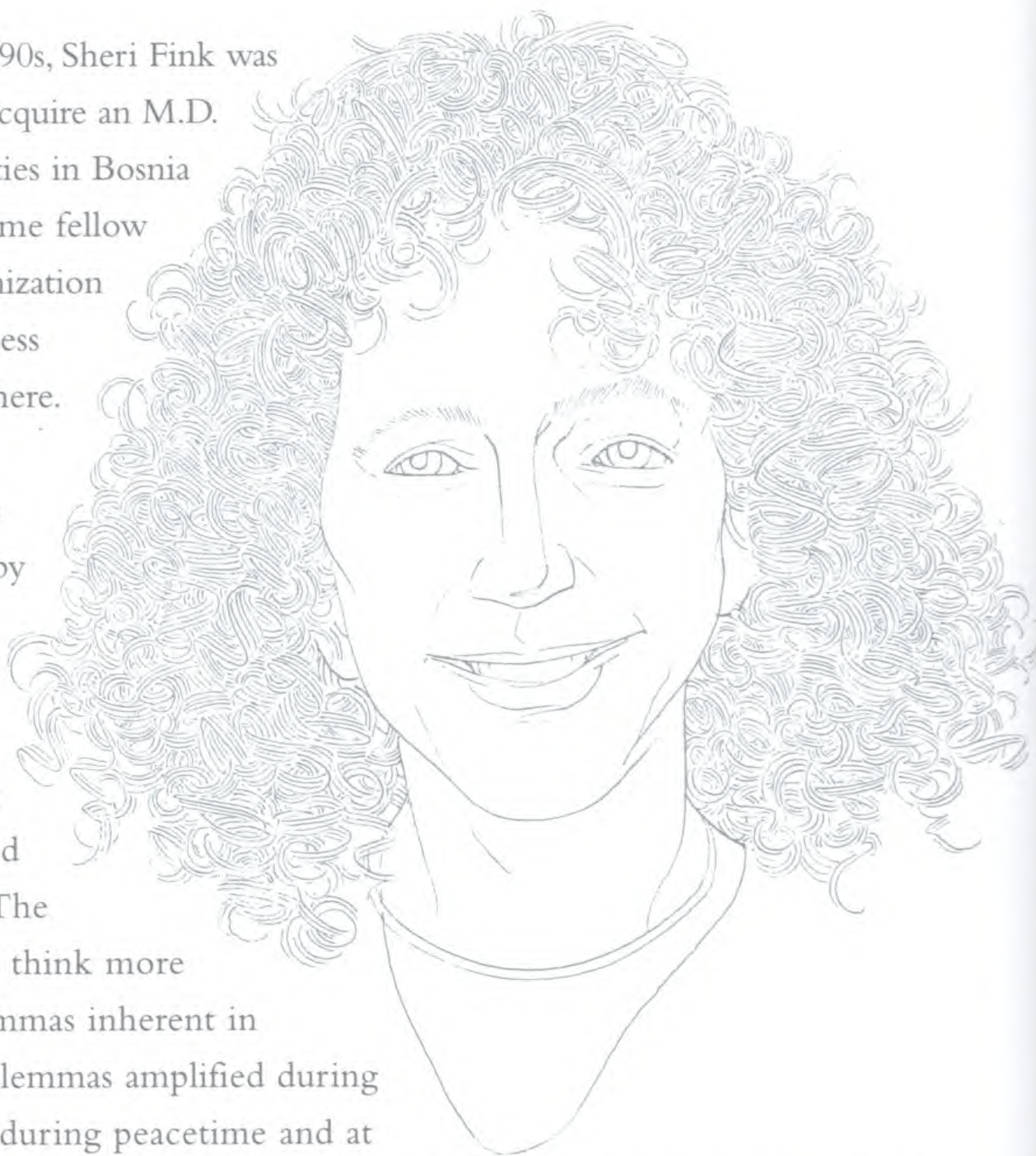
In March 1999, with war raging in the Serbian province of Kosovo, she went to neighboring Macedonia as a member of Physicians for Human Rights. Fink traveled

straight to the refugee-packed Kosovo-Macedonia border, but soldiers patrolling the area told her she could not enter. As she stood there wondering what to do, she noticed a tall man in a white coat just inside the border area. It was an Albanian doctor working for the aid group International Medical Corps (IMC) whom she had come to know the previous year while researching her book. Her friend caught her in a bear hug and turned to the guard: "Let this woman in. She's a doctor. We need her."

Fink had come to research human rights abuses, but because there were few doctors for the tens of thousands of refugees, she was drafted to provide medical care. "I was thrown into a situation I wasn't really ready for," Fink says. "Every minute or two volunteers would run up bringing sick people on stretchers." Though there was no way to relieve the suffering of the countless refugees, Fink found a small sense of satisfaction in being able to provide medical care to some of those who needed it.

She spent a few more weeks at the camps helping to design and conduct a population-based study of human rights violations against the Kosovar Albanian population. After NATO peacekeeping troops entered the region that summer, she went into Kosovo and worked with IMC to restart its mobile primary health care clinics.

Fink is currently finishing her book about medical practice during war and this year will enter the Harvard-affiliated Emergency Medicine Residency at Massachusetts General Hospital and Brigham and Women's Hospital in Boston.



"Doctors can be personally threatened anywhere, and there are certain moral and ethical dilemmas you have to deal with, whether in Kosovo or the E.R."

Rosemary Flores, MD

Class of 1996

Family Physician, Los Angeles

Growing up in inner city Los Angeles, Rosemary Flores says two experiences influenced her decision to become a doctor. One was visiting her brother in the hospital, where he frequently was admitted for drug-related injuries. "I had a lot of early interactions with doctors," Flores says. The other was accompanying her mother to the suburbs where she was a housekeeper for a physician. There, she says, she saw "how the other side lived." Her mother's midlife career change to nursing also contributed to Flores' interest in medicine.

Flores was accepted into Stanford as an undergraduate, and although she had always been an over-achiever, she found the first two years more difficult than anticipated. "It was hard making the transition from inner-city life to Stanford, and for a time, I thought about quitting," Flores says. Instead, she took a year off and went to Taiwan to teach English. "That year gave me time to grow and regroup," she says. "I saw the amount of time my students put in to achieve their goals, and I thought that maybe I wasn't doing enough." When Flores returned to Stanford, she began to put more positive energy into her studies.

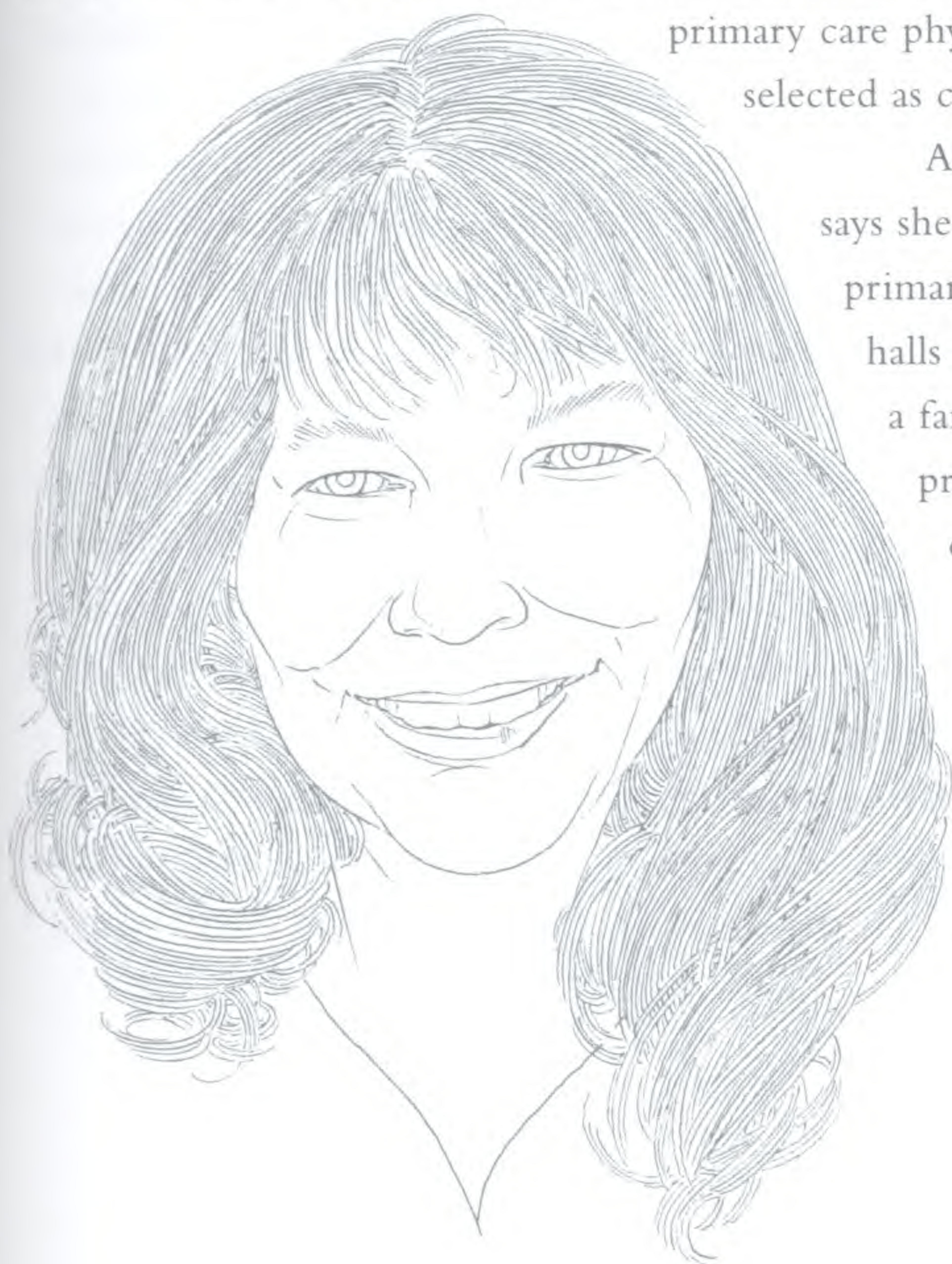
Flores' refocused efforts paid off, and she was accepted into Stanford medical school. But before starting, she spent a year teaching in Los Angeles, where she helped students make changes in their lives to improve their health, including encouraging some of the obese students to take up dancing. The students enjoyed the activity so much, Flores says, that they began to dance on the playground at lunch and recess. During medical school, Flores engaged in a similar project in East Palo Alto.

Because she enjoyed working directly with communities to improve people's lives, Flores decided to pursue a career in primary care. After graduation she went back to East Los Angeles to do her residency in family practice at the White Memorial Medical Center. There she became a Mead-Johnson scholar, an honor awarded to only a few primary care physicians nationally. She also was selected as chief resident.

Although she likes research and teaching, Flores says she has been happy with her decision to go into primary care. "It's a great feeling. I love walking the halls and knowing all the nurses and doctors; it's like a family," Flores says. "It might not have the same prestige as academic medicine, but I wouldn't change it for anything."

Over the last year, Flores has been setting up a private practice, but once it is established, she plans to earn a master's degree in public health at the University of California, Los Angeles, which she hopes will bridge her interests in primary care and research.

"It was great to go back to do family practice in the community where I grew up."



Denham Harman, MD, PhD

Class of 1954

Internist, Omaha

Few medical researchers are fortunate enough to find an important biological process that is linked to a wide range of human diseases. With the discovery of the significance of free-radical damage in biological systems, Denham Harman initiated an avalanche of discoveries about myriad disease processes and therapies to alleviate them.

Early in his career, Harman seemed destined for honors in another scientific field. After earning a B.S. and Ph.D. from the College of Chemistry at the University of California, Berkeley, in 1943, Harman joined the research arm of Shell Oil in Emeryville, California. Over the next six years working as a research chemist, he was granted 35 patents; the compound of one was used in the “Shell Strip” — a plastic strip to catch flies.

“One morning free radicals crossed my mind, and I knew I had the answer, even if I didn’t know the details yet.”

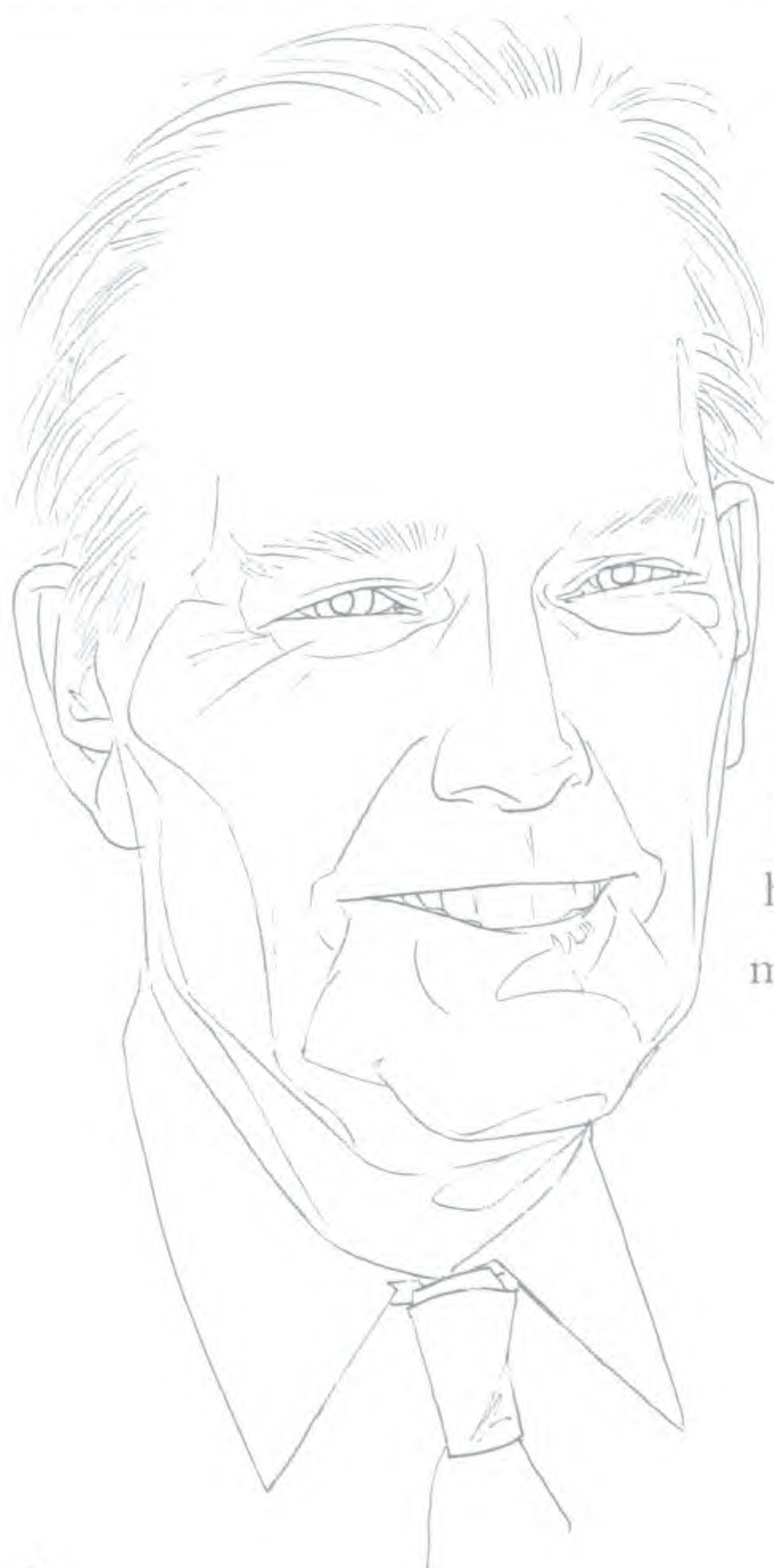
Harman’s work at Shell increased his interest in biology as well as in the cause of aging, and he decided to apply for medical school. University of California administrators, took a dim view of accepting Harman, however, since taxpayers had already helped pay for his chemistry training. Luckily for medical science, Stanford took a more enlightened view and admitted him in 1949.

In 1954, between his internship and residency in internal medicine, Harman became a research associate at UC Berkeley’s Donner Laboratory of Medical Physics. There he had time to pursue his long-time interest in the cause of aging. “The first four months was a period of progressively increasing frustration,” Harman says. “Then one morning free radicals crossed my mind, and I knew I had the answer, even if I didn’t know the details yet.” Free radicals are highly reactive chemical subspecies that can tear apart the molecules needed for life’s normal processes, including those of the mitochondria, the cellular power-

houses that largely determine an individual’s lifespan. For 10 years, Harman investigated his idea — “the free-radical theory of aging” — while most scientists ignored the concept or ridiculed it.

By the mid-1960s, however, other scientists were beginning to see the potential of the free radical concept. The next decades of research showed that free-radical reactions were involved in many diseases, including cancer, atherosclerosis, and Alzheimer’s disease. In recent years, scientists have even come to see the connection between free radicals and the aging process. Harman’s model has led to many studies of the benefits of using antioxidants like vitamins C and E to curb free-radical damage.

Harman became chair of cardiovascular research at the University of Nebraska College of Medicine in 1958. He has continued his efforts to minimize disease processes and to increase the span of healthy, useful life. Currently, he is investigating how free-radical damage might be connected to neuronal degeneration in Alzheimer’s disease.



Bert Duane Johnson, MD

Class of 1952

Urogynecologist, Palo Alto

To those in medicine who know him, Bert Johnson is easygoing and amiable, committed to advancing gynecologic surgery and to training medical students and residents. But to those in the rodeo arena who encounter him, Johnson is a fierce rival, vigorously competing for the trophy. This unusual blend of traits has made him a leader in both his professional lives.

Johnson began training for his medical profession at Stanford, where he also attended as an undergraduate. Following medical school, he headed to the Midwest to do an ob/gyn residency at Northwestern University Hospital, where he was responsible for 6,000 home deliveries in Chicago's southwest slums. "That was a real learning experience," he says.

Johnson then returned to California and worked at Santa Clara Medical Center. After two years, he began a private practice, while remaining a principal at Valley Medical Center. In the 1970s, he and a colleague established a joint residency program between Valley Medical Center and Stanford.

After 25 years in practice, Johnson found himself concerned about how often existing surgical techniques failed to cure female incontinence. He decided, at the age of 55, to give up general ob/gyn to devote himself fully to the problems of female incontinence and pelvic reconstruction.

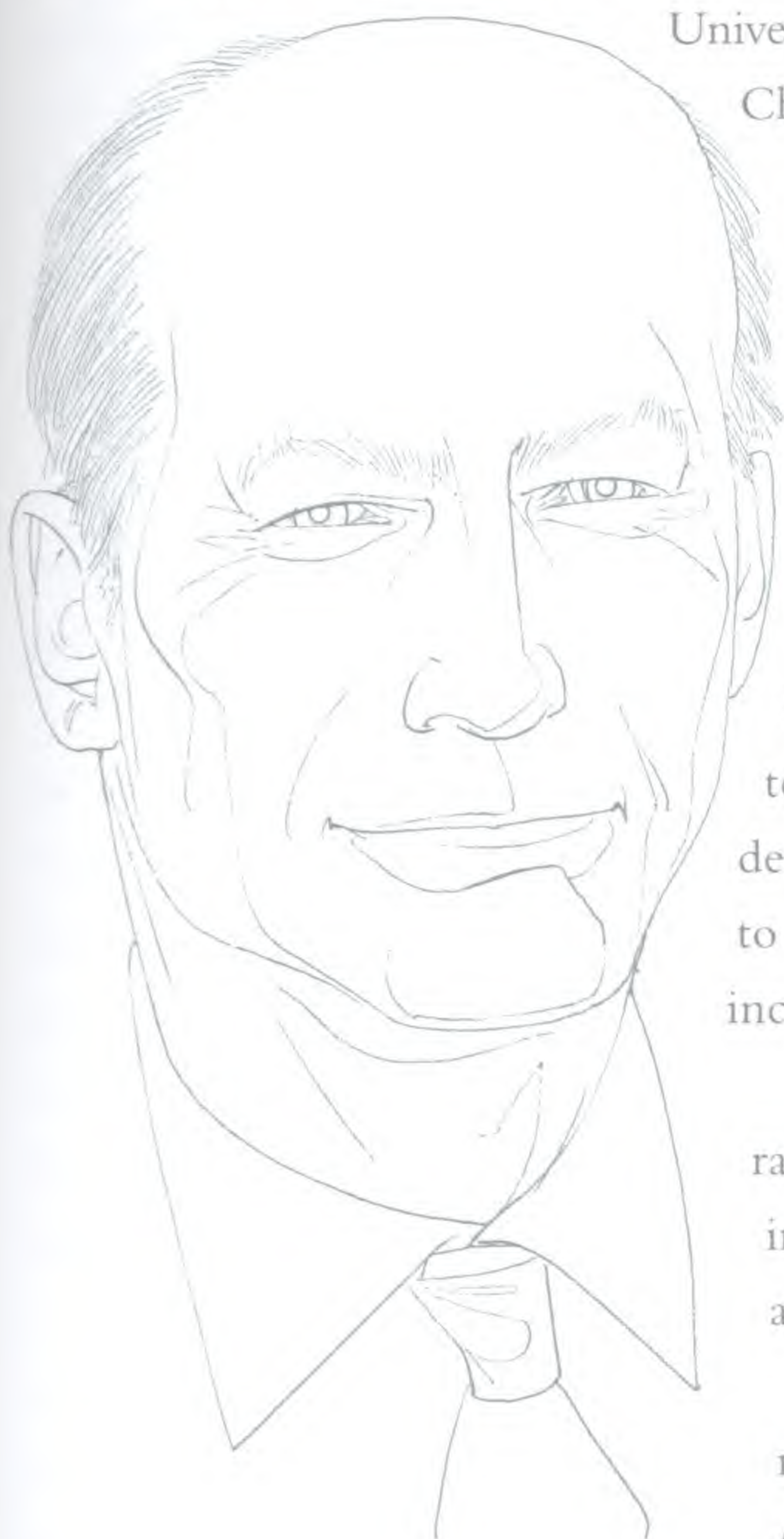
Johnson retired in 1992 to spend most of his time cattle ranching. But in 1994, a Stanford colleague called to ask for his help improving the training of residents in urogynecology, and within a short time, he was the acting chief of the gynecology division.

While busier than expected, Johnson has found the job rewarding. His first year back, the residents honored him with an outstanding faculty teaching award, and last year, the Association of

Professors of Gynecology and Obstetrics presented him with its annual award for excellence in teaching. Despite his busy schedule, he hasn't let his top rankings in the rodeo ring slip. In 1998, he won the championship buckle in the senior team roping at the prestigious Salinas Rodeo. "I get some quizzical looks when I show up for surgery wearing a rodeo buckle and cowboy boots," he says.

In addition, Johnson is one of a handful of Stanford doctors who spend three weeks every year at a missionary hospital in Guatemala, operating on women from all over Central America. "The trips are not without adventure," Johnson says. "The first year I went, I was hijacked by guys with Uzis. I managed to ditch them at a gas station when they went to the bathroom." Forever a teacher, Johnson was the first in the program to bring ob/gyn residents on the Guatemala trips. To date, about 20 have participated, and every year, more apply to go than can be accepted.

"My greatest pleasure is sharing my skills and medical philosophy with my residents and students."



Philip Lee, MD

Class of 1948

Health Policy Leader, Palo Alto

For nearly 40 years, Philip Lee has helped shape national health policy, serving as assistant secretary for health in two presidential administrations and acting as a key advisor on numerous public health initiatives.

Lee began his government service in the Navy. Shortly after graduating from medical school, Lee and his brother Hewlett (later a Stanford professor of surgery) responded to a call from the U.S. government for 5,000 physician volunteers. He served at several U.S. posts and then went overseas when the Korean War broke out.

When Lee returned from Korea, he went to the Mayo Clinic in Minnesota to do a residency in internal medicine and then returned to California to join the staff of the Palo Alto Clinic. In 1963, Lee went to Washington, D.C., to direct health services in the Agency for International Development. Two years later, President Lyndon Johnson named him assistant secretary for health in the Department of Health, Education, and Welfare.

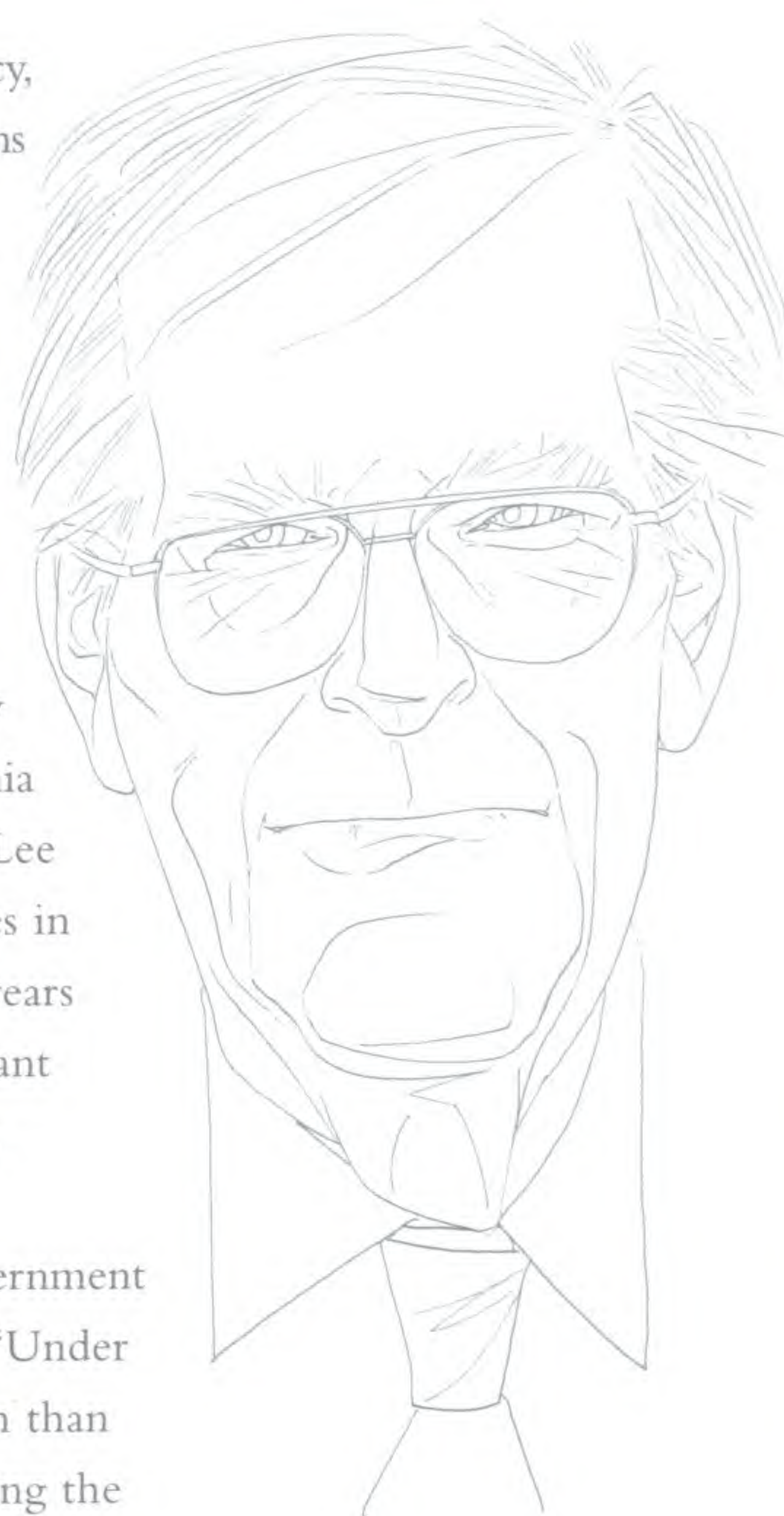
“In the '60s, people really believed the government could do something to solve problems,” Lee says. “Under Johnson, Congress enacted more health legislation than all the previous Congresses combined” — including the Medicare and Medicaid programs.

Lee left Washington in 1969 to become chancellor of the University of California, San Francisco, and professor of social medicine. Later he organized and directed the Institute of Health Policy Studies there, a program that has conducted important research and influenced numerous leaders in health policy for nearly three decades. He also wrote a number of books and articles and served on the boards of several large charitable foundations.

In 1993, although nearing an age when most people retire, Lee was lured back to the post of assistant secretary of health by the Clinton administration, and he became deeply involved in working on national health care reform efforts. Lacking the clear mandate and the budget flexibility of the Johnson era, he says the Clinton administration ultimately failed in its reform efforts. During this time, Lee contributed to other important projects, including recruiting several key agency directors, strengthening the Indian Health Service, and launching initiatives in tobacco control policy, food safety, and women's health. He also played a key role in efforts to revitalize public health services at the national, state, and local levels.

In 1997, Lee returned to the Bay Area. He is now teaching health policy in the Stanford Human Biology Program and doing research on federal health programs for the 21st century and Medicare prescription drug coverage at UCSF. “I very much enjoy teaching undergraduates,” Lee says. “And at least now I am able to take some weekends off.”

“The health of the public requires more than universal access to health care, it requires the participation of the government, the private sector, and the public.”



Ronald Levy, MD

Class of 1968

Oncologist, Palo Alto

Ronald Levy is a careful, considerate man who is modest about his accomplishments. But that outward persona masks his fierce dedication to fighting cancer. An innovator in his approach, Levy has put aside research on traditional cancer therapies to focus on using the body's own immune system to treat lymphoma and other forms of cancer.

Levy was inspired to go into oncology by Saul Rosenberg and the late Henry Kaplan — two pioneers in the field of oncology at Stanford. "They were the ones who gave me the chance to combine my interest in the immune system with work in lymphoma," Levy says. Following Stanford medical school and residency at Massachusetts General Hospital, Levy returned to work with Kaplan and Rosenberg as an oncology fellow. After a short period doing research in Israel, Levy was invited back to join the Stanford faculty.

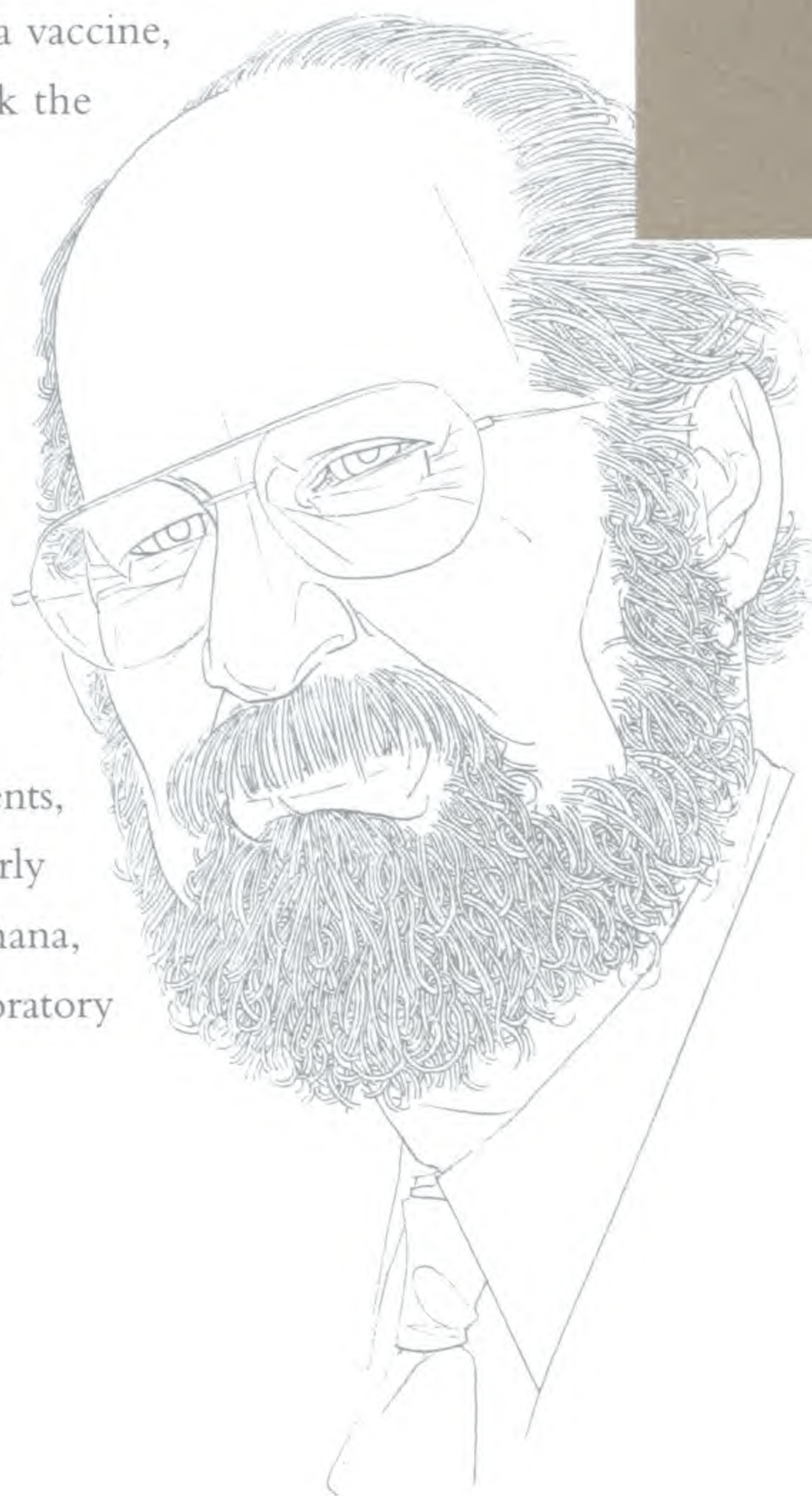
Levy began exploring an immunotherapy approach to cancer in the mid-1970s, when he showed that mouse monoclonal antibodies could attack cancer cells. This initial method of immunotherapy has continued to be successful; the U.S. Food and Drug Administration has now approved two monoclonal antibodies for fighting cancer — one for lymphoma and one for breast cancer.

But Levy was not completely satisfied with this method. His next goal was to use the body's own antibodies against cancer cells. In effect, he wanted to make a cancer "vaccine," using proteins grown from cancer patients' own tumors and specialized immune system cells. In early research, he found that B-cell lymphoma cells have a unique marker on their surface that identifies the cells as targets for the immune system. This marker could be produced in the laboratory and formulated into a vaccine, thus inducing the immune system to recognize and attack the cancer cells.

In his current approach, Levy is tailor-making a vaccine for each patient because the marker proteins for each cancer are different. "What we are doing right now is very customized; it takes a lot of time, is expensive, and is not very practical," he says. "Ultimately, we will find a way to make it practical." Practical or not, the therapies clearly can be successful; some patients have survived more than 10 years since their treatment.

One of Levy's great pleasures is working with students, providing the same kind of mentoring that he received early in his career. He also enjoys working with his wife, Shoshana, who is also a professor at Stanford. Together they run a laboratory dedicated to investigating cancer vaccines.

"What we are trying to do is use the patient's own immune system to fight cancer."



Linda Liau, MD, PhD

Class of 1991

Neurosurgeon, Los Angeles

As director of the Malignant Brain Tumor Program at the University of California, Los Angeles, Linda Liau experiences “high highs and low lows” in her work. “Saving someone’s life is exhilarating, but when most of your patients inevitably die of their disease despite your best efforts, it can be difficult,” Liau says. In addition to directing the program, Liau conducts research on the molecular biology and immunology of brain tumors.

When she started medical school at Stanford, Liau did not know what field she wanted to pursue. By the time she hit the third-year rotation in neurosurgery, however, she knew she had found a specialty well suited for her. “I am fascinated by neuroscience,” Liau says. “And like most surgeons, I am the kind of person who likes to go in and fix problems, so neurosurgery seemed like a good choice.”

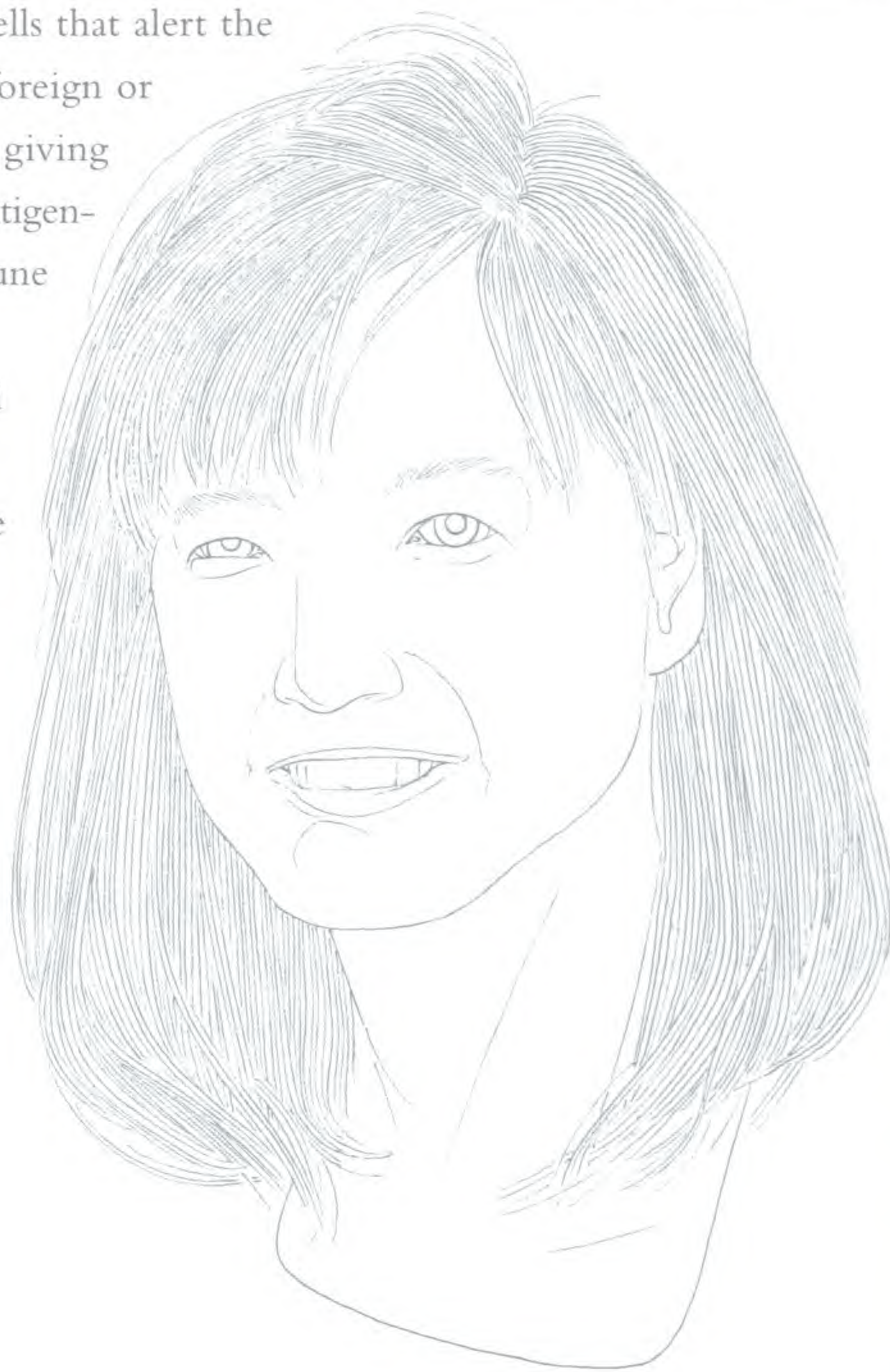
Halfway through Liau’s residency at UCLA, her mother was diagnosed with metastatic breast cancer, a disease that eventually killed her. That tragedy motivated Liau to take a more focused approach to her studies. “At that point, I decided what I really wanted to do was oncology, and neurooncology in particular,” she says. Believing she needed some research experience in oncology, Liau enrolled in graduate school at UCLA and earned a Ph.D. in molecular neuroscience, while still working on her neurosurgical residency. “It was a busy time,” Liau says.

After joining the faculty at UCLA, Liau set up her own laboratory, where she now studies the molecular biology of brain tumors. She has identified and cloned a number of genes that seem to be overactive in brain tumors, and she has been working on ways to improve the body’s immune response to tumor cells. One of the approaches she is studying is isolating the antigen-presenting cells that alert the immune system to the presence of foreign or cancerous cells. Liau is interested in giving key proteins from the tumor to the antigen-presenting cells to mobilize the immune

response against the tumor.

Liau says neurosurgery is sometimes perceived as a male-dominated profession, one that presents a difficult environment for women. She adds that people often initially think she seems out of place because she is a petite woman and younger than most of her colleagues. (She started medical school at age 19.) Generally those assumptions soon fall away, Liau acknowledges, when colleagues see her in action.

“Saving someone’s life is exhilarating, but when most of your patients inevitably die of their disease despite your best efforts, it can be difficult.”



Eduardo Luque, MD

Class of 1955B

Pediatric Surgeon, Mexico City

Like many other physician scientists, Eduardo Luque struggles to balance the complex demands of academic medicine: providing patient care, teaching tomorrow's doctors, and carrying out rigorous scientific investigations. But Luque faces challenges beyond those typical of his profession. For more than 25 years, he

has run a charity hospital in Mexico City, providing free orthopedic and spinal surgery to poor children with deformities. He has had to adapt the surgical techniques he learned in the United States to the conditions he found in Mexico. In the process, he has made significant advances in the field of spinal surgery.

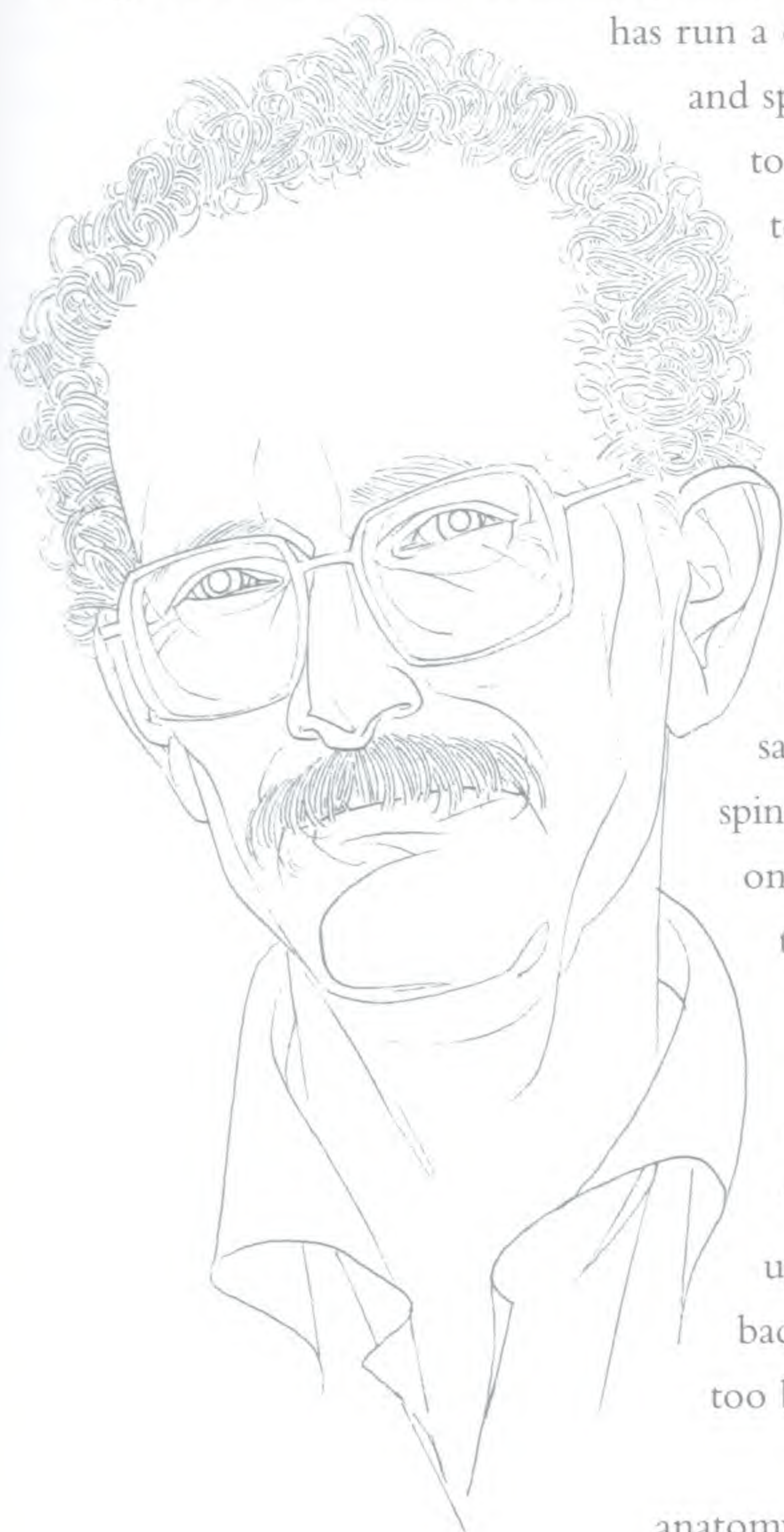
Luque was raised in Mexico, but he trained in the United States with some of the world leaders in spine surgery. After graduating from Stanford medical school, he stayed in the U.S. for further training, then eventually returned to his country. There he saw that little was being done for kids with spinal deformities, so he began performing surgeries on needy children. He quickly found, however, that the state-of-the-art techniques he learned in medical training would not work in Mexico. At the time, spinal deformity was treated with braces, casts, or distraction rods. "People would take the braces off to hold up the roof when it rained. Casts would come back with plastic toys inside them. And rods were too big and didn't stay in these malnourished kids," Luque says.

In 1968, he published a paper describing the segmental anatomy and function of the spine, and he proposed that treatment should also be segmental. Luque discarded the single rod approach and began using two rods and wire to fix individual vertebrae in the spine. At the time it was a completely new technology.

In 1980, after designing a new plate with segmental screw fixation through the pedicle, Luque brought together some friends who were interested in manufacturing it. That was the foundation of Danek, now one of the largest implant companies in the world. In 1998, the company was bought by Medtronic.

But Luque's greatest pride and joy is his charity hospital, the Dr. German Diaz Lombardo Hospital for needy children, which opened in 1974. He told doctors interested in working with him that they would get no money for their work — a radical idea at the time. To secure adequate funding for the hospital, he implemented a system of single procedure, third-party funding and private patient billing to help subsidize the 70 percent of surgeries that were free. Eventually, Luque would like to have a well-paid research and clinical staff at the hospital. But for now his work remains a labor of love.

"In Mexico there are rich people who can afford the best medical care in the world and others who get no attention at all."



Yvonne Maldonado, MD

Class of 1981

Pediatric Infectious Disease Specialist, Palo Alto

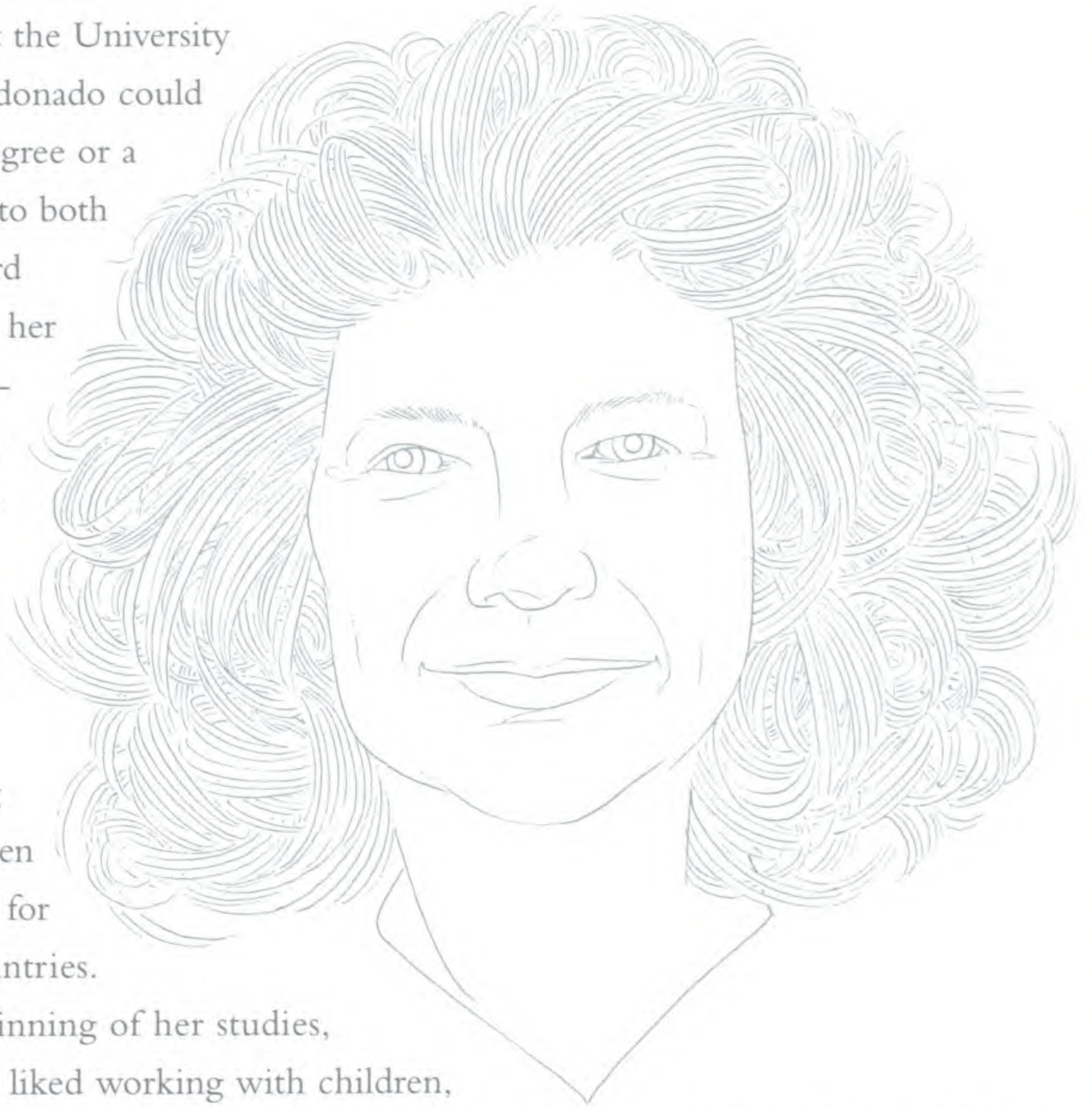
Upon earning a B.S. in microbiology at the University of California, Los Angeles, Yvonne Maldonado could not decide whether to get a medical degree or a master's in public health. So she applied to both programs and ultimately chose Stanford medical school. A contributing factor in her decision was Stanford's flexible curriculum, which allowed her to do research

in public health while pursuing her M.D. Now a specialist in pediatric infectious diseases, Maldonado focuses on preventing HIV infection in children and designing vaccines for use in developing countries.

From the beginning of her studies, Maldonado found she liked working with children, so pediatrics was a natural choice. She also enjoyed research, particularly studies in children because they generally involved only one disorder rather than the chronic problems that often affected adults. "In adults, diseases are multisystem, which makes the questions less clean-cut and the research more complicated," Maldonado says. She also liked the idea of being able to bring a child back to full health.

After medical school, Maldonado stayed at Stanford for her internship and completed her residency in pediatrics at Johns Hopkins. She enjoyed the pace of the Baltimore hospital and its interesting mix of inner city patients, so she decided to do a fellowship in infectious diseases there. During her fellowship, she became involved in a research project on rotaviruses. She then joined the Centers for Disease Control and Prevention's Epidemic Intelligence Service, landing in Berkeley to help monitor the HIV epidemic and other infectious diseases. But Maldonado wanted to keep her hand in research and clinical work, so she decided on a career in academic medicine. After completing her work with the CDC, she took a faculty appointment at Stanford in 1988.

Maldonado now spends her time working on the formidable problem of protecting children from infectious diseases in developing countries. She is the principal investigator of a study in Zimbabwe to identify ways to prevent transmission of HIV from infected mothers to their newborns, and she is working on methods to administer vaccines without using needles, which are often in short supply and unsterile in poor nations. She is also participating in a project in Mexico to test the administration of an aerosol measles vaccine. In the United States, Maldonado and her colleagues are looking at prevention of perinatal transmission of HIV through education and testing of women to ensure treatment and long-term survival.



"It's great to work with really bright, energetic people who are very dedicated to child health."

Fernando Mendoza, MD, MPH

Class of 1975

Pediatrician, Palo Alto

Pediatrician Fernando Mendoza has seen the statistics, and he wants to make an impact. Minorities will soon be the majority in California; already 40 percent of the children in the state are Latino, and one-fifth are children of immigrants. Increasingly, Mendoza knows, keeping all the children of California healthy will mean reaching out to those traditionally underserved populations. For Mendoza, part of the solution is to train more minority physicians and to interest more medical students in community medicine.

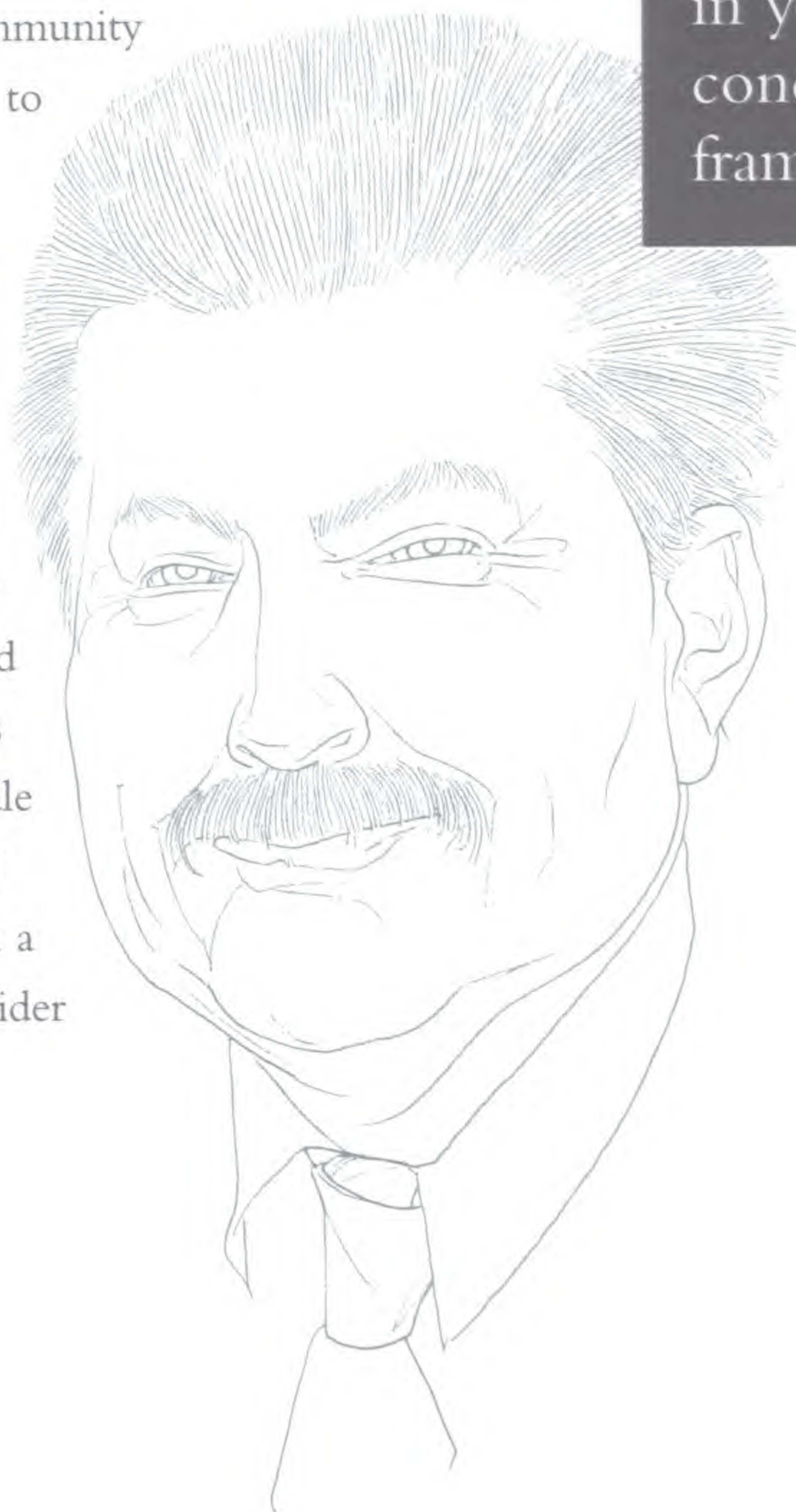
Mendoza knows from personal experience that it often takes more than being a bright student to become interested in a career in medicine. Although his father never went beyond sixth grade, both his parents emphasized the importance of education while he was growing up in San Jose, California. Mendoza planned to be a chemist, but in high school, his guidance counselor called him into his office and said, "I hear you want to be a doctor." Mendoza had not actually considered studying medicine, but with some encouragement, he began working toward that goal.

After earning a B.S. in biochemistry, he applied to medical school and was accepted at the University of California, San Francisco, and Stanford. Wanting more information about Stanford, he wrote asking for a brochure. "They took that as a letter of acceptance, so I said, 'Well, I guess I'll go to Stanford,'" Mendoza recalls.

Once in medical school, Mendoza still wanted to be involved in his community, so he contacted a group of medical students who were establishing a clinic in his old San Jose neighborhood. Together they started the Gardner Health Center, which is still operating after almost 30 years. That experience deepened his interest in reaching out to underserved communities, so after finishing a residency in pediatrics, he went to Harvard to earn a master's degree in public health. His strong interests in community health and public policy led him back to Stanford in 1979 to pursue a Robert Wood Johnson fellowship.

Mendoza's work caught the attention of the Stanford administration, and in 1981, he joined the faculty. In 1983, he became an assistant dean of student affairs and began to design programs to attract minority students to the medical school. Mendoza has also continued to foster community medical care, especially in pediatrics. He directs an academic pediatric fellowship for those interested in working with underserved minority children, and he has launched programs to promote health careers among middle and high school students in San Jose. He has also focused on the national front, working with medical schools with a high Latino enrollment to encourage those students to consider pursuing community medicine and academic careers.

"If you've never had any personal contact with someone who is a health care provider, that career option may not be in your conceptual framework."



J.D. Northway, MD

Class of 1960

Hospital President & CEO, Madera/Fresno, CA

J.D. Northway knows it was an extraordinary plan — the building of a full-service, pediatric teaching hospital in the middle of California's rural Central Valley. Two decades ago, some considered it a farfetched vision. But Northway was one of the believers, helping forge Valley Children's Hospital in Fresno into a premier facility for advanced pediatric care for children from all over California.

Northway comes from a family with a long history of medical interest and Stanford involvement. His father, brother, and uncle were all Stanford professors, and his mother and aunt were Stanford nurses. Northway started medical school at Stanford's San Francisco facility but finished his training at the new School of Medicine complex in Palo Alto. According to Northway, clinical practice at the new Stanford

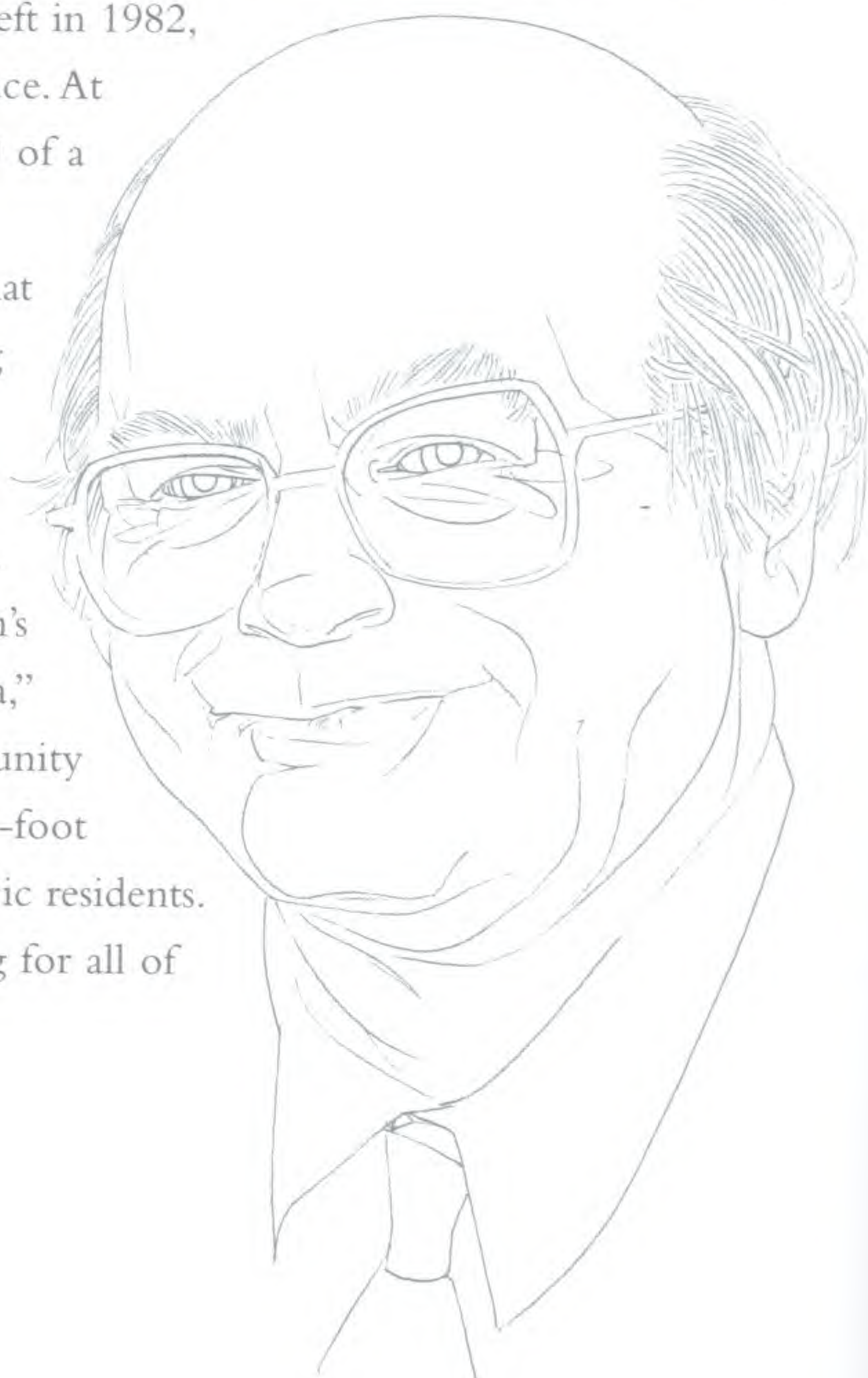
Hospital was slow at first. "We were lucky if each student got a patient a week in the clinic," he says. "You would come in on Monday, and they told you what day they thought you would get a patient."

Northway went to Utah and then Ohio for his pediatric and pediatric nephrology training and then completed a research fellowship at the Scripps Clinic and Research Foundation in San Diego. Following his fellowship, he went to Indiana University to serve as chief of pediatric nephrology. Northway and his wife always wanted to return to California, however, so when a position opened in the University of California system at Fresno's Valley Medical Center, they made the move.

Two years later, UC administrators considered plans to open a new medical school in Fresno. In preparation for the new school, Valley Children's Hospital leaders decided to hire a full-time medical educator, and Northway was invited to apply. Over the next several years, Northway began doing administrative work in addition to teaching and caring for patients, and when the hospital CEO left in 1982, the board asked Northway to take his place. At the time, he was the only physician CEO of a

children's hospital in the country.

The medical school was never built in Fresno, but that did not stop Northway and his colleagues from establishing a first-rate teaching hospital affiliated with the University of California, San Francisco. Launching the enterprise took commitment from the hospital, its physicians, and the public. "Community physicians knew that a comprehensive children's center would be able to better serve the children in our area," Northway says. "The dedication of everyone in the community has paid off." Today the hospital has a new 615,000-square-foot facility, faculty in every pediatric subspecialty, and 24 pediatric residents. "Everyone has kept their eyes on the prize, which is caring for all of our children," Northway says.



"We've been able to build a state-of-the-art pediatric center in the valley so that our children are able to get the kind of care that they could get anywhere in the country."

Ann Stuart Orloff, MD

Class of 1950

Radiologist, San Diego

When Ann Stuart Orloff was 45, an age at which most physicians are well established in their careers, she came back from a long professional hiatus to pick up where she left off 17 years earlier. Already trained in internal medicine and pediatrics, Orloff began training in diagnostic radiology. Now she serves as a clinical

professor of radiology at the University of California, San Diego, and keeps a full schedule as chief of radiology at the affiliated Veterans Administration outpatient clinic. Orloff says she feels lucky that she got to take time to raise her family and still have a long and fulfilling career in medicine.

Orloff, the daughter of a Stanford professor of political science, always knew she wanted to become a doctor.

"I never had to go through that process of deciding what I wanted to be," Orloff says. At that time — the 1940s — Stanford gave 12 free quarters of schooling to the children of faculty members, so she squeezed her premedical requirements into two years and was able to receive funding for the first part of medical school.

After receiving her M.D., she joined her father in Europe, taking an infectious disease fellowship in Paris and then becoming a physician for

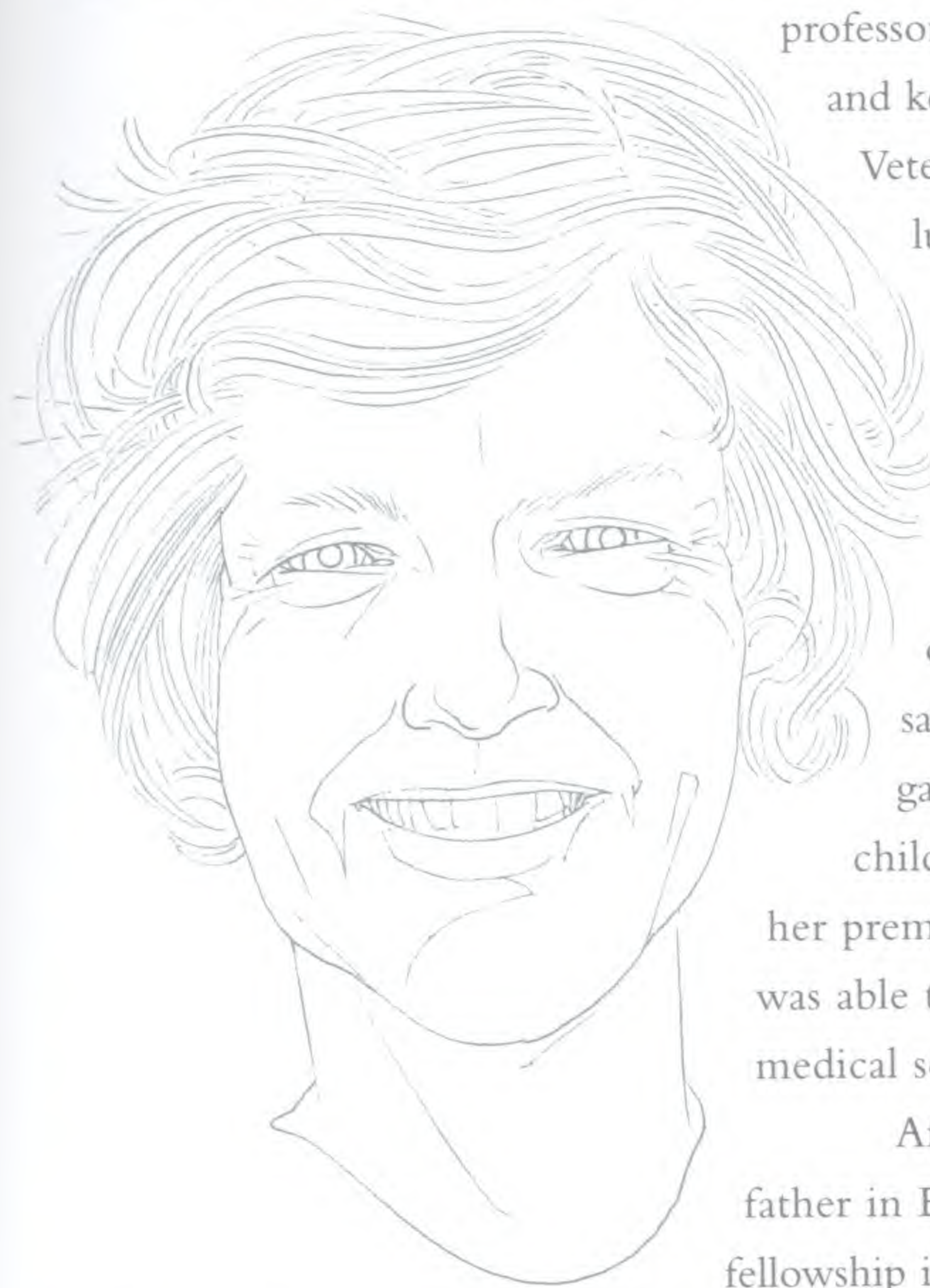
the Salzburg Seminar in American Studies. With "some misgiving," she says, she returned to do a residency in internal medicine in San Francisco and New York.

Eventually, though, Orloff veered off the traditional career path. She joined her new husband, Marshall, at the U.S. Army Hospital in Stuttgart, Germany, working in pediatrics for a year and then quitting to raise their six children.

In 1971, despite little free time, Orloff decided to return to medicine. She began five years of residency training in radiology. "In those days most physicians often worked 24 hours a day, and in radiology, the hours were a little more structured," Orloff says. When she completed her radiology training, she joined the faculty at UCSD and the VA, where she has been ever since.

Now 74, Orloff has not slowed down at all, and she only regrets that there are not more hours in the day. Although she is older than most physicians at the hospitals where she works, she is quick to adapt to changes in medical practice. For example, Orloff's clinic is the first in the VA system to go filmless — using digital X-ray images instead of film.

According to Orloff, one of the many satisfactions of her medical career is the opportunity to contribute to the knowledge of future physicians and to advocate for patient care. Orloff says she loves the challenges of medical problem solving and enjoys being part of so many patients' care; consequently, she has no plans to retire any time soon.



"Women can do everything, they just can't do it all at the same time."

Scott Parazynski, MD

Class of 1989

Astronaut, Houston

Scott Parazynski lived in so many places around the world when he was growing up, that Stanford, where he attended as both an undergraduate and medical student, is his only real hometown. Parazynski still travels around the globe — now literally. One of only 10 physicians in America's Astronaut Corps, Parazynski considers himself one of the luckiest people in the world. But luck seems to have little to do with his success: Parazynski is an achiever who knows what he wants and finds ways to reach his goals.

"I've always been fascinated with aviation and space, and I never grew out of the dream of flying in space some day."

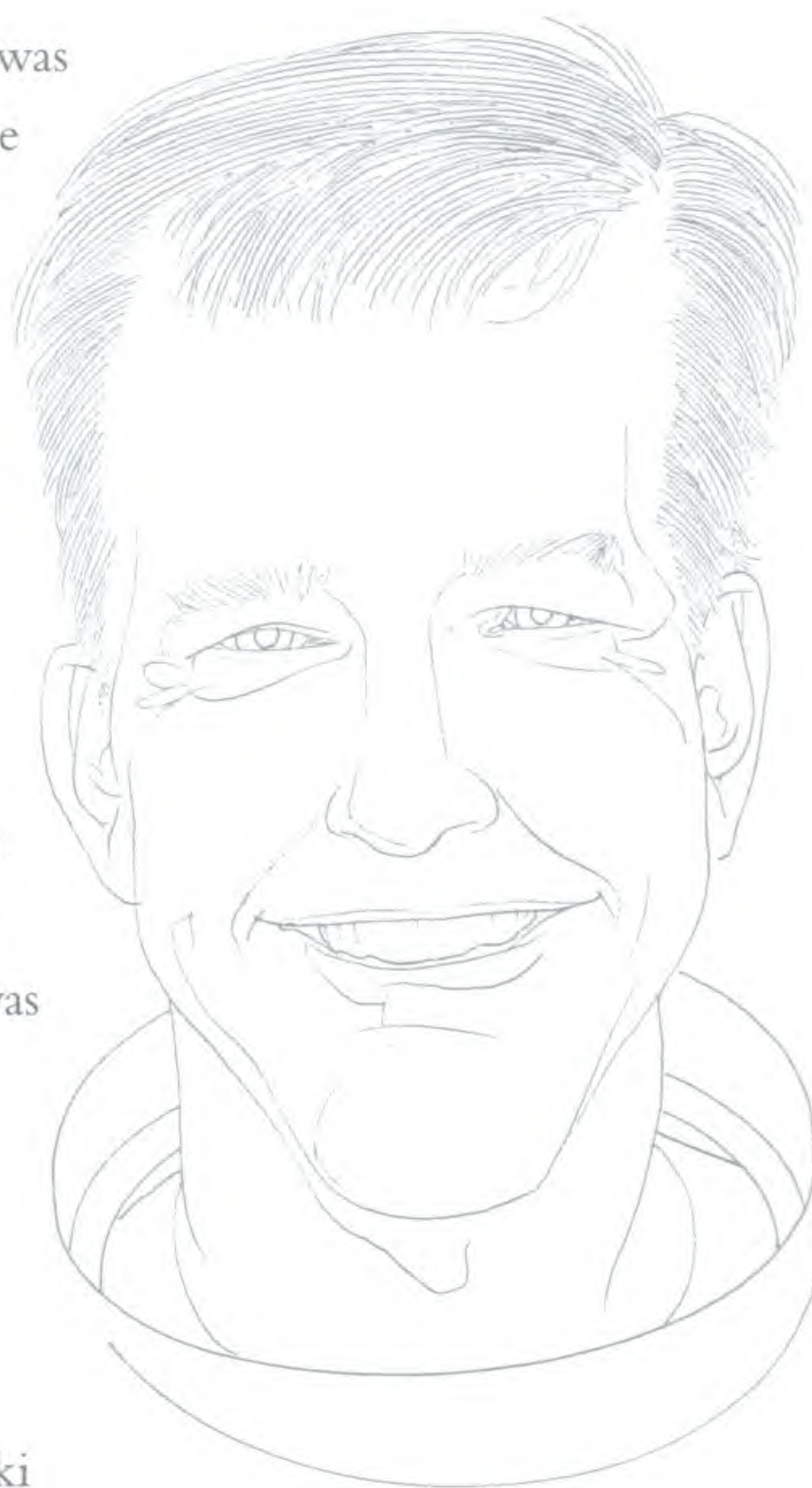
Parazynski was born in Arkansas, but his father's work for Boeing took the family to Senegal, Lebanon, Iran, and Greece. One constant throughout Parazynski's peripatetic childhood, however, was his fascination with aviation and space. At Stanford, he was introduced to the NASA-Ames Research Center, where he did research on how the cardiovascular system adapts to microgravity. This work led to an interest in understanding the physiology of the human body in space.

When he finished medical school, Parazynski submitted an application to become an astronaut, not really expecting that he would even get an interview. To his surprise, he was accepted into the astronaut program before he finished his residency in emergency medicine.

Training to be an astronaut has been one of the best parts of his new career, Parazynski says. He has had to master a wide variety of new fields and tasks, including shuttle operation, geology, oceanography, and materials science. But it has been the experience of actually going up in the shuttle that he has enjoyed most. "It can't be described," Parazynski says. "It's definitely a thrilling ride and more beautiful than anything I could imagine."

During his first flight on Atlantis in November 1994, Parazynski took part in a comprehensive global ozone-mapping mission. His second flight in 1997 was a rescue mission for the troubled Mir space station, where he conducted a space walk with a Russian cosmonaut. Parazynski's 1998 flight, however, was by far the most widely publicized. On that mission Parazynski was in charge of experiments on fellow astronaut John Glenn. The flight of the 77-year-old astronaut allowed NASA scientists to look at the relationship between the physiological changes of aging and similar changes that occur during space flights.

Being an astronaut was once a young man's job, Parazynski says. "Now it looks like the retirement age is 77." With a long career ahead of him, Parazynski is hoping to work in the space station, travel to the moon, and perhaps, eventually, be part of a NASA mission to Mars. In April 2001, he will be involved in several space walks to build an international space station.



Sidney Raffel, MD

Class of 1943

Immunologist, Palo Alto

Although he has been retired for nearly 25 years, Sidney Raffel is remembered as one of Stanford's most inspirational scholars. Showing deep respect for those he trained, he earned a reputation as a thoughtful teacher and a strong advocate for students.

Raffel did not plan to become an academic physician. He earned his M.D. in the middle of World War II and thought his first job would be in the military. But like many Stanford graduates in those years, Raffel was asked to stay at the school to teach physicians for the war effort. When the war ended, he consulted at various Veterans Administration laboratories and continued to teach at Stanford.

Students remember Raffel as a mentor with an easy-going manner and an infectious intellectual curiosity. They also recall that he was willing to do the hard work himself instead of leaving it to graduate students. Raffel put his easy-going manner aside, however, when it came to defending his strong convictions about equality in medical education. Former female students in particular remember that Raffel went out of his way to make them feel confident in their studies. "He made sure that people felt comfortable at a time when not everyone thought to do that," one student recalls. Raffel downplays his efforts: "It wasn't very fashionable at the time for women to go into higher studies, but I treated them the same as I would anyone else." Perhaps it helped that Raffel himself had five daughters.

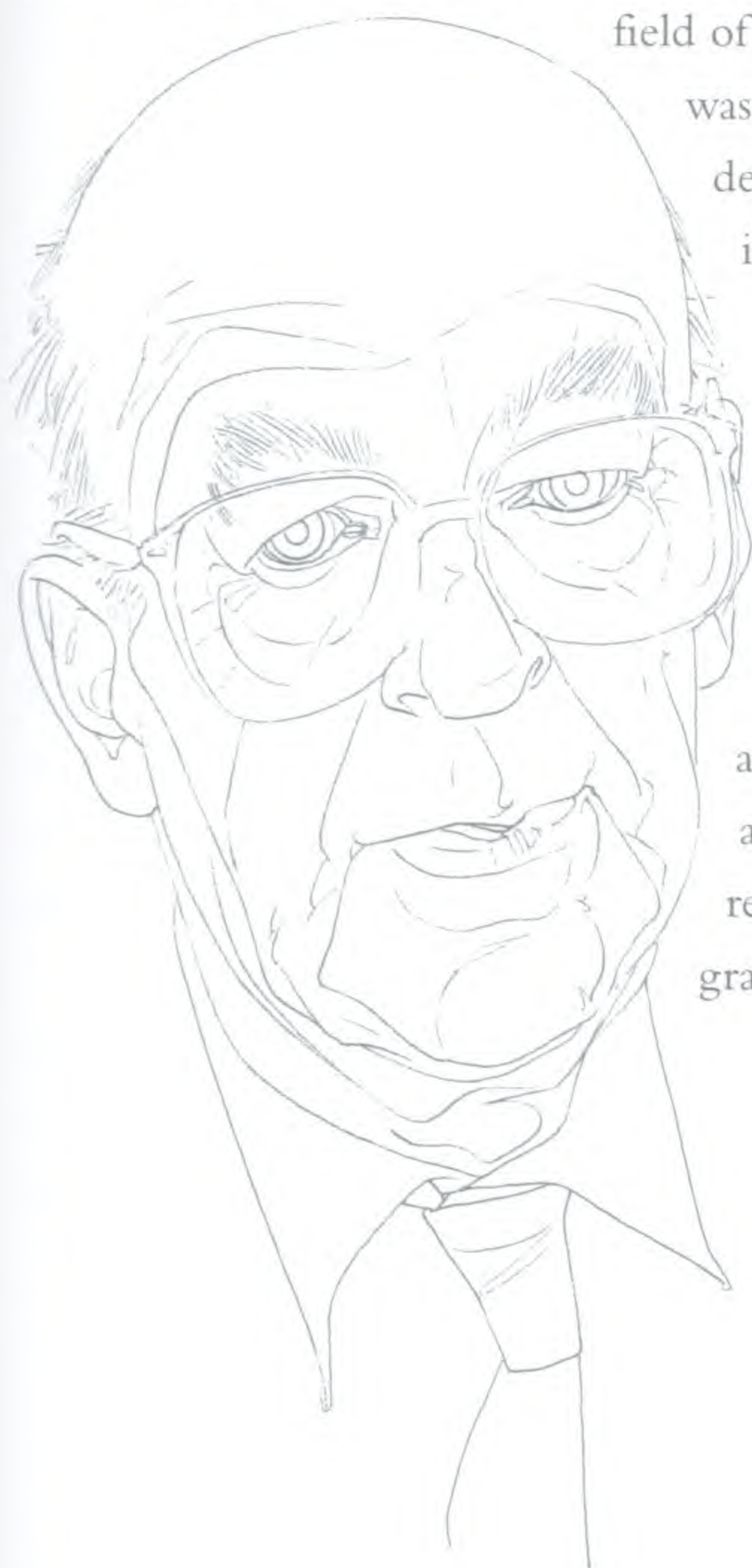
Raffel's own contributions to medical science were in the field of immunology. Before coming to Stanford medical school, he studied immunology at Johns Hopkins University. "When I first learned about antigens and antibodies, I was immediately fascinated," Raffel says. Johns Hopkins was an ideal school for someone interested in the burgeoning field of immunology, because at the time — the 1930s — it was one of the few universities with an immunology department. While at Johns Hopkins, Raffel studied infectious mononucleosis and parasitic diseases.

At Stanford, Raffel continued to do research in immunology. He studied the tuberculosis bacillus, eventually isolating a fraction of the bacillus that spurs the body's immune reaction against it.

Raffel also wrote a textbook of immunology, which was widely used for many years.

Since his retirement in 1976, Raffel has spent time traveling around the world to teach in Japan and Iran and to visit his daughters and their families. At home, he paints and stays up-to-date on medical research by reading journals, talking with colleagues, and going to grand rounds every week.

"It wasn't very fashionable at the time for women to go into higher studies, but I treated them the same as I would anyone else."



Neil Resnick, MD

Class of 1977

Gerontologist, Pittsburgh

Twenty years ago, Neil Resnick looked at geriatrics and saw one of the most interesting, challenging, and rewarding fields in medicine. But when he told his fellow residents that he wanted to pursue geriatrics, they greeted his decision with skepticism. Most said the specialty would be too depressing. Resnick stuck to his plan, however, and today he is a leading force in the field.

Thanks to the work of Resnick and others like him, the medical community now recognizes older people as a unique population. "What I began to realize 20 years ago was that older people got sick with different things, and in different ways, than younger people," Resnick says. He wondered if the understanding of disease, which was derived from studies of younger individuals, would extrapolate to the elderly. If not, he

thought it might explain the apparent failure of many interventions used in older patients. Testing this hypothesis required him to develop new approaches to deal with the extensive co-morbidity (concurrent illnesses) not accounted for in earlier studies. It also required the establishment of new ethical guidelines for studies involving the elderly.

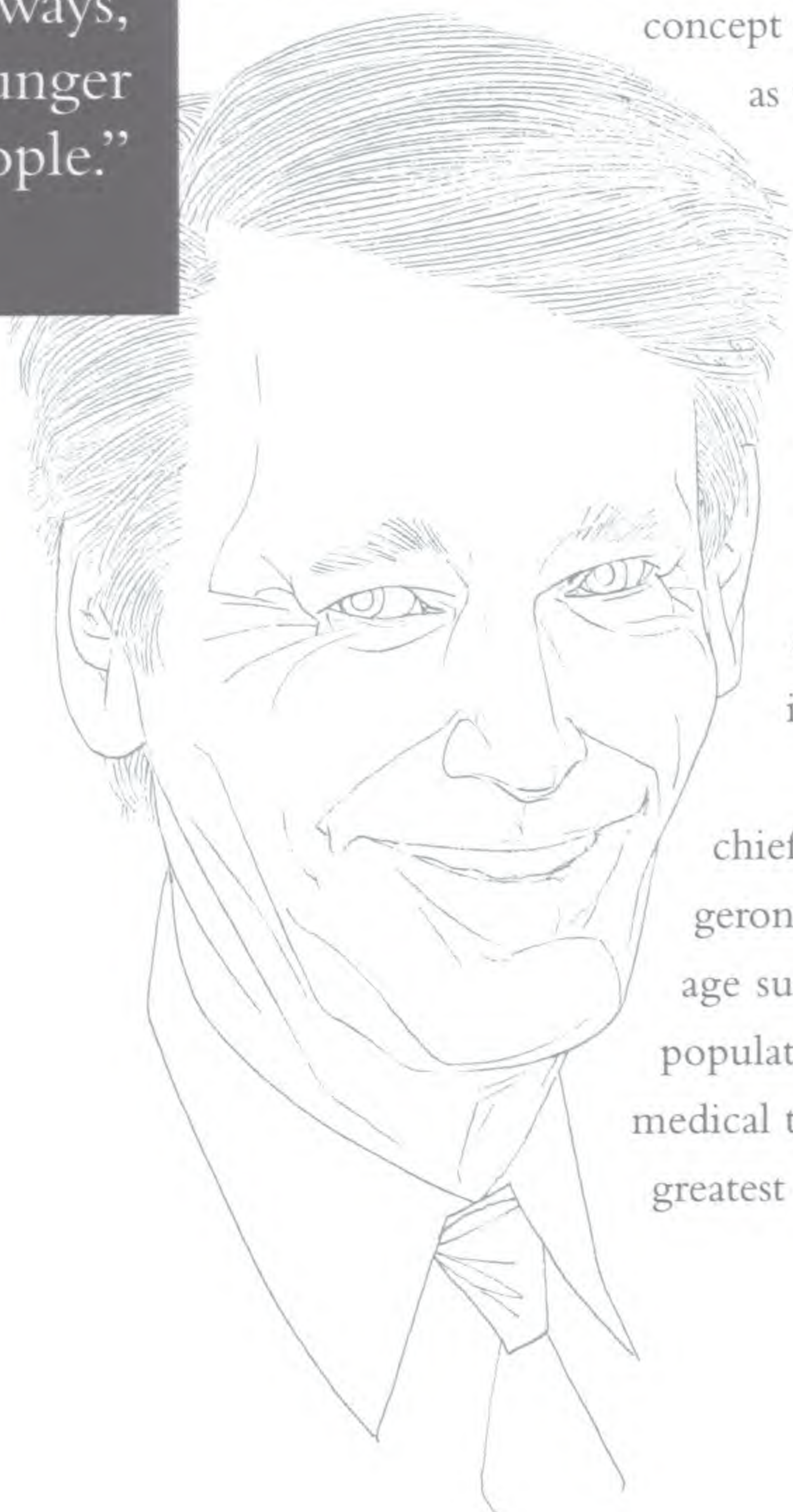
Resnick and others in geriatrics now know that the elderly often should be approached differently. For example, he says, "It is difficult to improve cognition much in a 60-year-old with Alzheimer's disease because it is likely that all of the mental impairment is due to the Alzheimer's alone. But if you have an 85-year-old with Alzheimer's, there are usually many other factors that magnify the apparent deficit, and treating them can result in significant cognitive improvement." The unexpected lesson, he says, was that the older patient usually can be treated effectively, even when the underlying disease cannot be, a

concept that he has successfully applied to other geriatric conditions as well. The results of this work have changed policies and guidelines in the United States and around the world.

Resnick has also been a strong proponent of factoring quality-of-life issues into treatment decisions. The discovery that people care very much about quality-of-life and would often trade years for a more comfortable and satisfying life has also altered medical decision-making, Resnick says. "For example, patients with cancer often prefer treatment for their urinary incontinence instead of their malignancy."

Resnick, who is currently professor of medicine and chief of geriatrics at the University of Pittsburgh, notes that gerontologists will continue to wrestle with how to help people age successfully. In many ways, the growth of the elderly population has been the greatest triumph of medicine. "But the medical triumphs of the 20th century will likely present us our greatest challenges in the 21st," he says.

"What I began to realize 20 years ago was that older people got sick with different things, and in different ways, than younger people."



Victor Richards, MD

Class of 1939

Surgeon, Sonoma, CA

When you ask former Stanford medical students and residents to name their most influential mentors, Victor Richards consistently makes the top of the list. "As a teacher he was unparalleled," one alumnus recalls. "He instantly intuited the strengths and weaknesses of the student before him and adjusted his style to best help that student learn." And many note that, despite his personal accomplishments, he never brought his ego into the classroom. "He is a kind genius who has ascended to the pantheon of great masters," says another former student.

Richards entered the University of California, Los Angeles, at the age of 14, when the campus first opened in 1932. He took courses at UCLA and then at UC Berkeley before finishing his studies

and earning a bachelor's degree at Stanford in 1935.

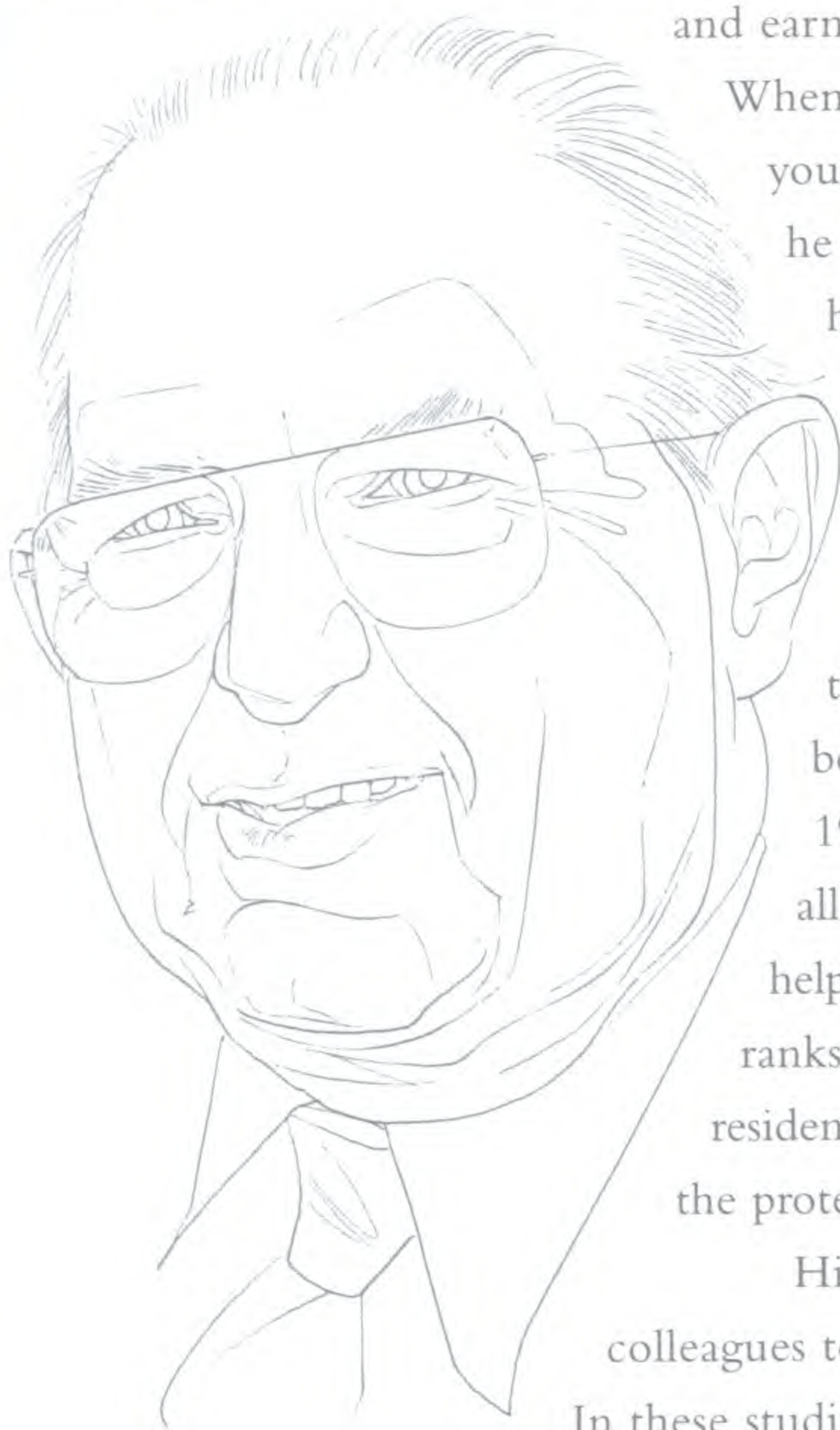
When he finished medical school, Richards was too young to get a license to practice medicine, so he began teaching medical students to support himself. When he finished general surgery and orthopedics residencies in 1943, the U.S. government asked him to stay at Stanford to train doctors for the war effort.

Richards continued to teach and climb the academic ladder over the next decade, becoming chair of the Department of Surgery in 1955. A strong proponent of fairly rewarding all individuals for their achievements, Richards helped women surgeons move through the academic ranks, and he appointed the first black surgical resident at Stanford Hospital in the mid-1950s, despite the protestations of some faculty and patients.

His interest in transplantation surgery led Richards and several colleagues to perform early lung transplantation experiments in animals. In these studies, they developed better ways of suppressing the immune

response to transplants. They also demonstrated the importance of pre- and post-operative care in ensuring the success of the operations. Transplantation research at Stanford benefited as much from Richards' skill in recruiting good people as it did from his surgical expertise. During his chairmanship, Richards recruited several prominent transplantation researchers, most notably Norman Shumway, who led the first successful efforts to perform heart/lung transplants in humans.

When the medical school moved to Palo Alto in 1959, Richards stayed in San Francisco to be chief of surgery and staff at Presbyterian Medical Center and Children's Hospital. Richards also remained a clinical professor of surgery at Stanford and at UCSF, continuing to inspire generations of residents and students with his teachings for many more years until he retired.



"What I most enjoyed was taking care of people and teaching bright students."

Mack Roach, MD

Class of 1979

Radiation Oncologist, San Francisco

Mack Roach intended to be a physicist, not a physician. From early on, Roach was enchanted with physics, earning a bachelor's degree in the discipline from Morehouse College and later working at the Stanford Linear Accelerator Center. But when his uncle asked him once what physics was useful for, Roach says he suddenly realized that he wanted to pursue something that would benefit people more concretely. Roach's decision to study oncology rather than charged particles has resulted in important improvements in the treatment of prostate cancer.

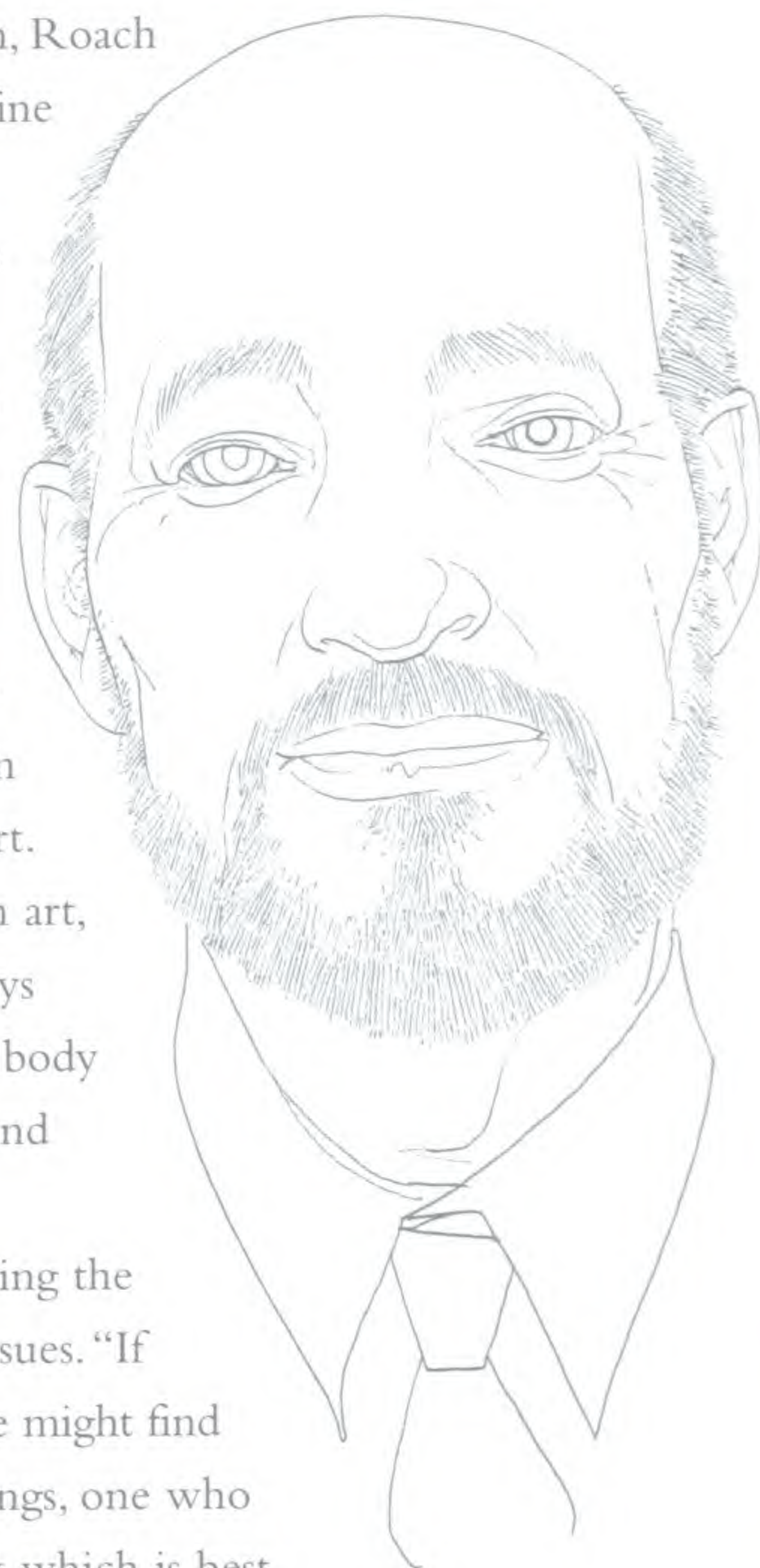
“Radiotherapy
is still
very much
an art,
and
we are the
artists.”

While attending Stanford medical school, he developed a profound interest in cancer. Later he came to realize that radiation oncology allowed him to combine his interests in physics, oncology, and art. In fact, Roach now thinks of radiation therapy as an art, just like the painting and photography that he enjoys doing. In this healing art, Roach “paints” the human body with radiation, controlling the intensity, exposure, and three-dimensional shape of the radiation field.

Part of Roach's research is aimed at discovering the best method for delivering radiation to cancerous tissues. “If someone is going to get a picture done of his wife, he might find a number of artists — one who does charcoal drawings, one who does oils, one who does watercolors — and then ask which is best. But there is no single best medium, just as there is no single best type of radiation therapy for cancer,” says Roach, who is now at the University of California, San Francisco.

Roach is helping to design the optimal way to deliver radiation precisely to the tiny prostate gland. He has focused on developing the next generation of radiation therapy, called intensity-modulated radiation therapy. “Much of the challenge of delivering radiation precisely is being able to design the shape of your target,” Roach notes. “New machines offer a great deal more flexibility in determining exactly where radiation is going to be delivered, and we use advanced software to determine how to zap the tumor while delivering minimal radiation to healthy tissues.” Roach is part of a National Cancer Institute committee that is exploring the best ways to apply the new technology.

Roach is also investigating why some ethnic and racial groups have higher rates of prostate cancer than others. “A Chinese man living in China will have much lower risk of prostate cancer than an American man,” Roach notes. “But if a Chinese man moves to the U.S., his risk will rise, and if a Chinese man is born and raised here, his risk will be even higher.” Understanding such differences, Roach says, will tell us a lot about the factors that affect one's risk of getting prostate cancer.



Joe Sachs, MD

Class of 1985

Television Producer, Hollywood

During medical school orientation, Joe Sachs learned that students could pay tuition for four years but stay in school for five or six years to pursue interdisciplinary studies. With a strong interest in health education and preventive medicine, Sachs did not have to be asked twice. In his first year, he took courses in communications and then spent the summer working for the Public Health Service in Washington, D.C. There Sachs realized he was more interested in creating health messages than in reviewing grants and giving others money for information campaigns. "I found that what really excited me was doing the creative work," says Sachs.

When he returned to Stanford, he enrolled in the master's program in filmmaking. For his thesis, Sachs wrote and directed vignettes presenting ethically difficult situations, which were used as a platform for discussions among physicians-in-training.

After medical school, he moved to Los Angeles to do a residency in emergency medicine at the University of California, Los Angeles. While still in training, he created programs for Lifetime Television and consulted on various films.

But in 1994, he got a call that changed his career. A writer for a new show called "ER" was phoning local emergency departments seeking doctors to help with his research. When the writer called Northridge Medical Center, he reached Sachs. The two got along well, and Sachs started working with the "ER" writers on an informal basis.

Later that year, he was invited to become the show's on-set medical director, a role he soon learned was not glamorous. "I was the person responsible for creating the entire medical reality of the show," he explains. Sachs studied every week's script and wrote a 20-page report detailing the medical supplies needed. Then he worked with the costume, make-up, and special effects departments to ensure that clothes and injuries looked real. He also taught actors how to do procedures and to say medical words correctly. Most challenging of all, he says, was choreographing the exact movements that would take place as the team of actors treated a patient. Sachs says because the scenes are so realistic, medical and nursing schools often use clips of the show to train students.

In addition to being medical maven for the show and continuing his work at Northridge, Sachs wrote a script every season. His 1998 teleplay about a toxic chemical spill was nominated as the best TV script of the year by the Writers Guild of America. Two years ago, Sachs gave the job of medical director to another doctor in order to be a full-time writer on "ER." Recently, he became one of the show's producers. But he is most proud of the fact that studies indicate over half of "ER" viewers learn about important health care issues from the show, and they discuss them with their families.

"Some people thought I had sold out to Hollywood, but it feels great to be working on a show that affects the public health of America in such a positive way."



Debra Schwinn, MD

Class of 1983

Molecular Pharmacologist, Durham, NC

Debra Schwinn has orchestrated a life filled with her two loves: music and medicine. She originally planned to be a concert violinist, but once she decided to focus on science, she threw herself into it as passionately as she studied music. Now she is a professor at Duke University Medical Center and director of the molecular pharmacology laboratories.

Switching professional tracks did not cause her to give up the violin, however. As she studied chemistry at the College of Wooster in Ohio, she taught violin and played in a bluegrass band. When she came to Stanford, she played in the symphony orchestra and a variety of chamber music ensembles.

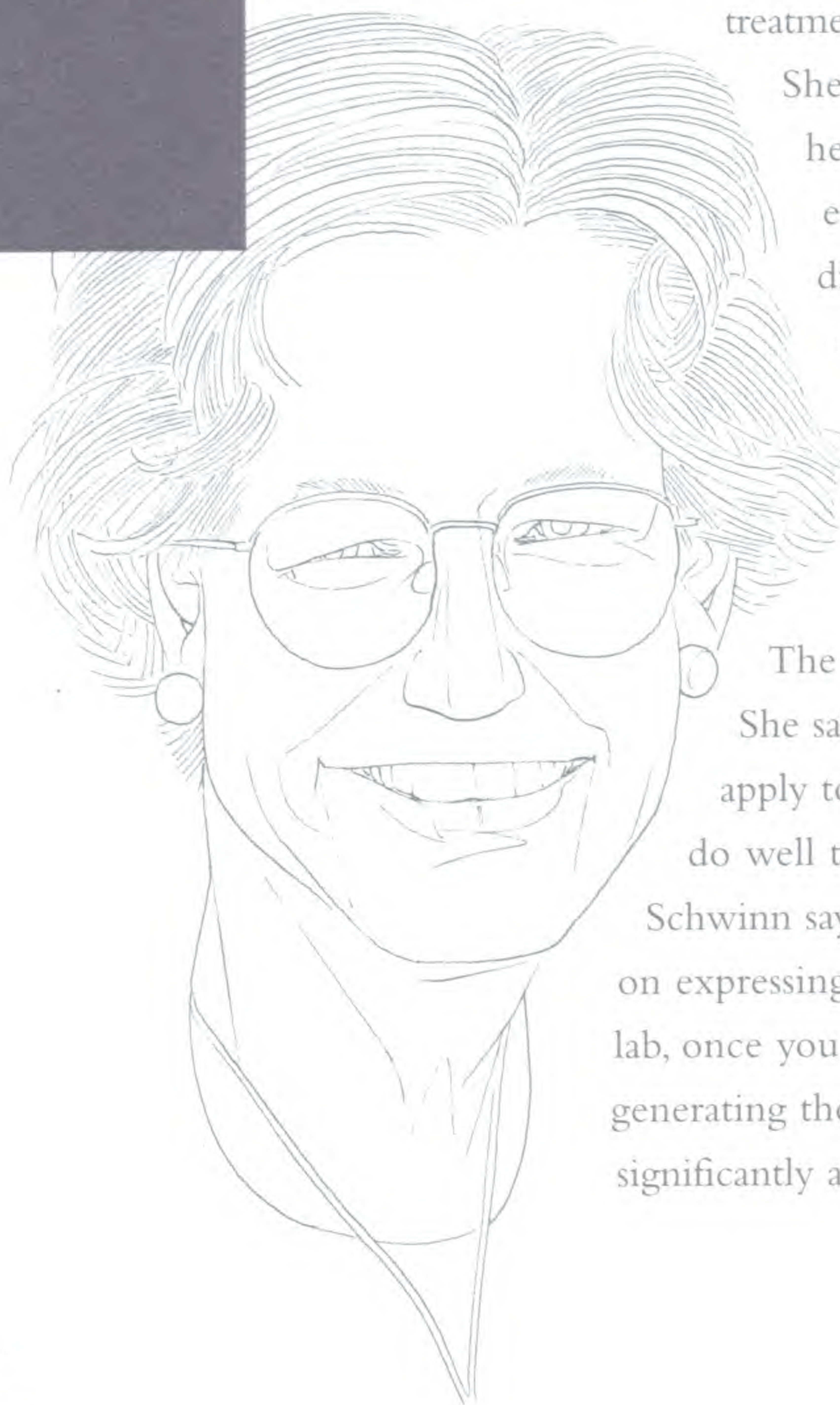
During medical school, Schwinn decided she wanted to focus on cardiac anesthesia and pursued a residency at the University of Pennsylvania, which had a strong program in anesthesia. She became interested in understanding cardiovascular pathophysiology at a molecular level, so she went to Duke for an intensive clinical research fellowship in cardiac anesthesiology, then spent five years studying adrenergic receptors (ARs), proteins that help translate the body's stress signals into action (alertness, increased heart rate, and blood pressure). Later, she joined the faculty at Duke and set up her own laboratory.

Schwinn continues to combine clinical and basic science research in studying mechanisms underlying regulation of α_1 ARs — specific receptors that cause smooth muscle contraction in vessels and the prostate. Since identifying new α_1 AR subtypes, her research has had impact in two important areas — cardiovascular regulation and genitourinary pathophysiology. These seemingly disparate areas are connected by unique regulation of the receptor subtypes in aging and disease. Schwinn's laboratory has also helped redefine treatment of lower urinary tract symptoms based on these studies.

She says she has begun incorporating genetic analysis into her basic and clinical research studies as well. "It will be exciting to determine how genetic differences relate to disease outcome, particularly in heart surgery." Schwinn recently began a sabbatical at the National Human Genome Research Institute at the NIH, where she received a Visiting Investigator Program award to study the genetics of hypertension.

Schwinn continues to find great pleasure in music. The day she became a full professor, she gave a violin recital. She says that music has taught her many valuable lessons that apply to science. "In both science and music, there is pressure to do well technically, but the important part is going beyond that," Schwinn says. "In music, once you become proficient, you can focus on expressing yourself and developing your own musical style. In the lab, once you learn how to solve scientific problems, you can start generating thoughtful mechanistic questions that have the potential to significantly advance understanding of human disease."

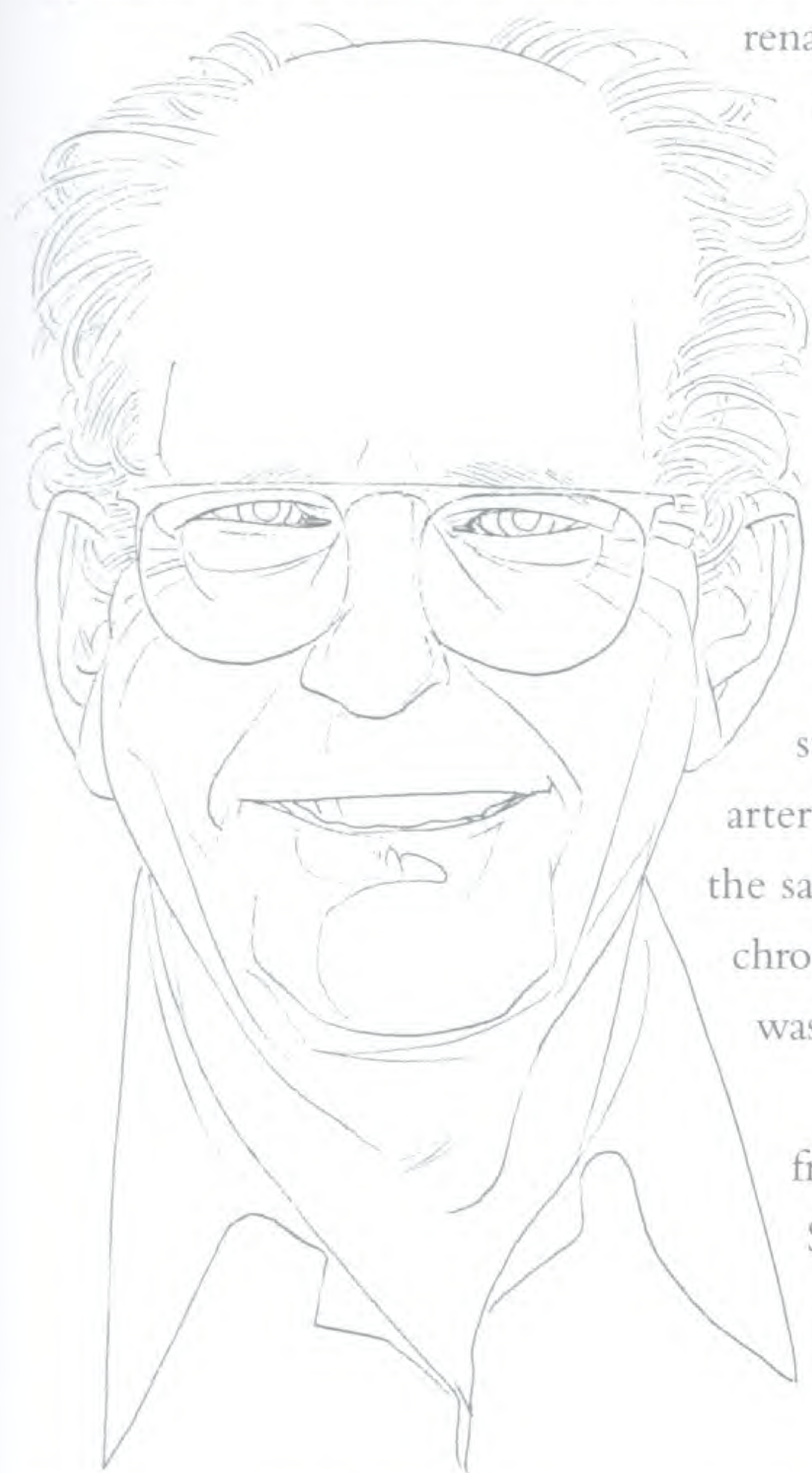
"In both science and music, there is pressure to do well technically, but the important part is going beyond that."



Belding Scribner, MD

Class of 1945

Nephrologist, Seattle



More than half a million patients worldwide are on chronic dialysis, alive because of an invention developed 40 years ago by Belding Scribner. As a physician at University Hospital in Seattle, Scribner was haunted by a patient with acute renal failure who was admitted for treatment. A biopsy revealed the patient had chronic

renal disease, and because repeated dialysis would be ineffective, the only thing the doctors could do was send the man home to die.

The problem with the techniques used at the time was that whenever a patient needed dialysis, physicians had to insert glass tubes into a vein and artery, then pull the tubes out and tie off the blood vessels. After repeated dialysis, they would run out of places to tap into the bloodstream. Scribner had the idea that a U-shaped Teflon shunt — one end inserted into an artery and one end into a vein — could stay in the patient permanently. During dialysis, arterial and venous cannulas could be hooked up to the same spot each time. With Scribner's invention, chronic renal failure, which had been 100 percent fatal, was suddenly 90 percent survivable.

Scribner's interest in medicine developed from his own experience as a patient. As a child, Scribner had severe asthma, and he decided he wanted to be a doctor like the ones who helped save his life. He entered college at age 16 and graduated from the University of California,

“About two weeks after we sent the man home to die, I woke up in the middle of the night and realized how we could save these patients.”

Berkeley, in 1941. Scribner was accepted into medical school at both Harvard and Stanford, but he says his decision to go to Stanford was “the most crucial decision I ever made,” because Stanford gave him more investigative freedom than he would have had elsewhere.

As an intern and resident in San Francisco, Scribner became interested in the kidney and invented some simple bedside tests to measure patients' electrolyte levels. In his intern uniform, pushing his white lab cart around the hospital, Scribner says he looked like an ice cream vendor. Following a fellowship at the Mayo Clinic, Scribner joined the faculty at the University of Washington in Seattle.

In addition to inventing the shunt, Scribner has continued to improve dialysis procedures and to develop techniques to eliminate complications from chronic treatment. He has also worked on a kind of reverse dialysis — an artificial gut that allows patients with bowel problems to absorb nutrients into the bloodstream.

Since the late 1960s, Scribner has lived on a houseboat near his office at the university. For many years he commuted by canoe, until several canoes were stolen. Not to be deterred, Scribner got a motorboat, which he shuttled back and forth in after that.

Alexis Shelokov, MD

Class of 1948

Epidemiologist, Dallas

Alexis Shelokov's life has been so full of international globetrotting and intrigue that hearing about it is like dipping into a spy novel. But Shelokov is no secret agent; rather he is a sleuth of the scientific kind, ferreting out infectious disease outbreaks and launching full-scale assaults on the microscopic culprits. Shelokov has been so useful to national and international programs in health and defense that government officials have continued to call on him, even as he approaches the age of 80.

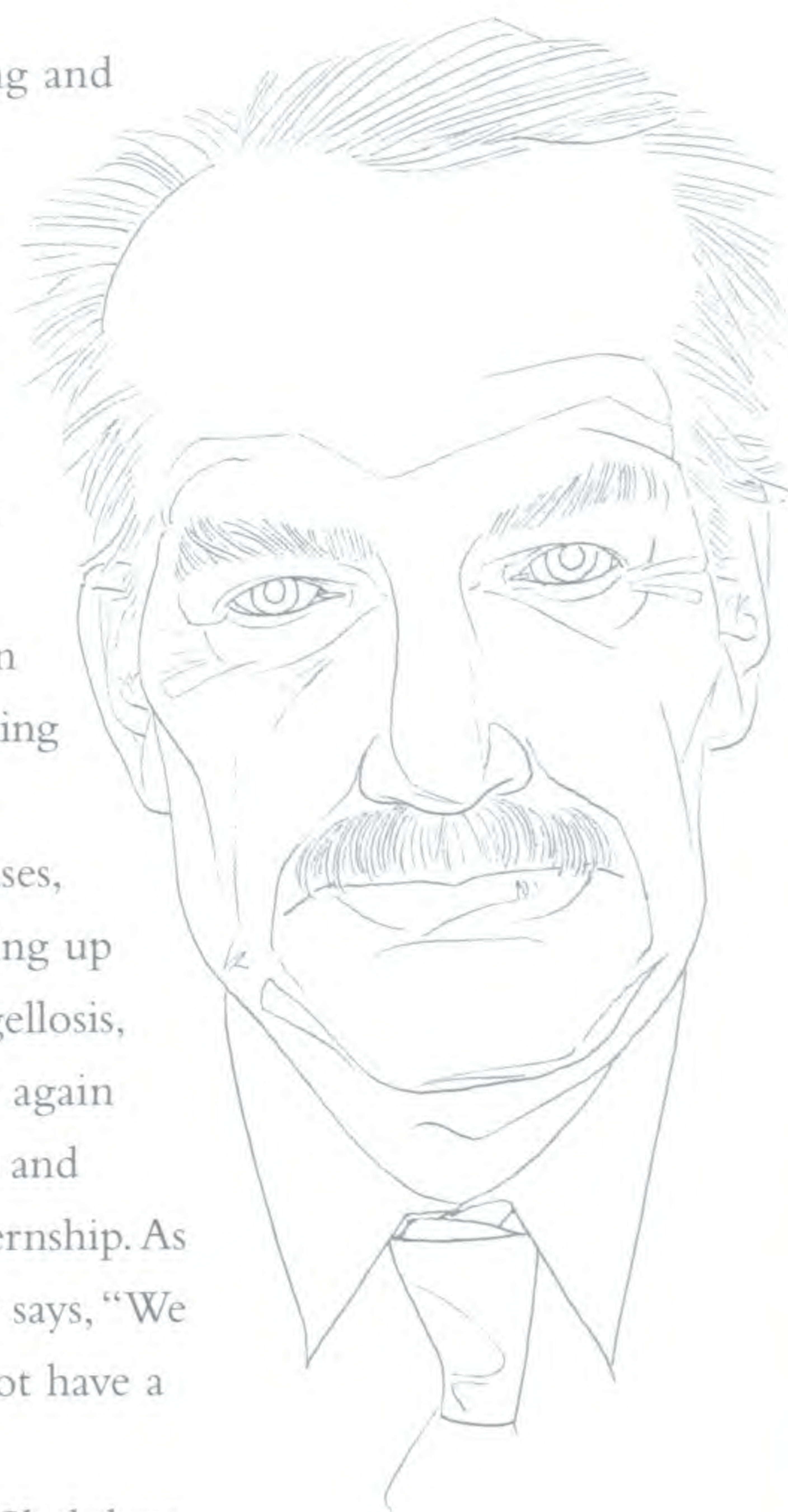
“The issues of emerging infections and bioterrorism weapons are related in many ways.”

Shelokov was born in Manchuria, China, in 1919 and came to the United States in 1937, intending to study medicine. He later enrolled in Stanford's M.D. program. His familiarity with infectious diseases, however, began well before medical school. Growing up in Manchuria he saw waves of cholera, plague, shigellosis, and typhoid fever sweep through the region. He again landed in the middle of major epidemics — polio and diphtheria — when he went to Boston for his internship. As a chief resident in charge of infectious diseases, he says, “We were so busy, I took over in July 1949, and I did not have a day off until June 1950.”

Although he always planned to practice clinical medicine, Shelokov developed an interest in polio research and went to work at the National Institutes of Health. In 1957, the NIH sent him to Panama to establish a tropical virology laboratory. There he launched a research program that led to major advances in understanding viral diseases such as hemorrhagic fevers and viral encephalitis. Because of his fluency in Russian, Shelokov also became involved in a number of scientific exchange programs, including leading two delegations to the Soviet Union.

In 1968, Shelokov became chair of the new microbiology department at the University of Texas Health Sciences Center in San Antonio. A decade later, he moved to Baltimore to become a professor of epidemiology at Johns Hopkins and director of vaccine research for the Salk Institute. Part of the job for the Salk Institute was to develop vaccines against potential biological weapons, an effort he has been involved in ever since. In the early 1990s, Shelokov was part of a delegation invited to Russia to end speculation that a 1979 outbreak of anthrax was the result of an accident at a secret Soviet biological weapons laboratory. Despite the intent of the mission, the speculation proved true.

Shelokov retired to San Antonio in 1992, but the State Department recruited him to be a senior vaccine advisor for the U.S. Agency for International Development, sending him to the Ukraine and Russia to help control re-emerging infectious diseases. Since retiring, Shelokov says that he still finds “lots of loose ends” and even some new projects that keep him from really slowing down.



Linda M. Dairiki Shortliffe, MD

Class of 1975

Urologist, Palo Alto

When Linda Shortliffe was an intern, she had no interest in urology and even tried to trade away her urology rotation. Had she succeeded in the trade, Stanford and the medical community might have lost out on one of the leading figures in the field of urology today.

Shortliffe's early interest was in plastic surgery. But several fateful circumstances interceded to redirect her attention to urology. First, she noticed that she liked the collegiality of people in urology more than in some other specialties. Then, a trusted friend encouraged her to explore fields beyond plastic surgery. And finally, as she finished her internship at Stanford and planned to do general surgery training in Boston, a spot in the urology residency program at Stanford opened, so she returned a year later.

In 1978, she finished her urology training and joined the faculty at Palo Alto Veterans Affairs hospital. There she studied and treated prostate and bladder cancer and did research on prostatitis. But Shortliffe really wanted to focus on urological problems in children, so she decided to do a pediatric urology fellowship during her first sabbatical. Once again, however, fate played a hand in her destiny. On the first leg of a trip to Philadelphia, Boston, and Toronto for interviews, she had an in-flight accident. After undergoing surgery in Philadelphia, she was told not to fly for three months, so she was unable to complete her interviews. But eventually she returned to join the staff of Children's Hospital of Philadelphia. There she developed a strong interest in pediatric urology. "I went from working on 80-year-olds to working on 2-month-olds, which was extremely traumatic because of the size difference and my lack of familiarity with children," says Shortliffe.

When the sabbatical year ended, Shortliffe returned to the Palo Alto VA hospital and then transferred to Stanford to do pediatric urology full time. Since the opening of Lucile Salter Packard Children's Hospital in 1991, she has recruited two additional pediatric urologists. In 1995, she was appointed chair of Stanford's urology department.

Shortliffe has become well recognized for her studies of the physiology of kidney obstruction in newborns, as well as for research on infections and the influence of hormones on the urinary tract. She continues to operate on patients and train residents, but she says the administrative demands of her position leave her less time than she would like for these activities. "We don't have a lot of flexibility in working with our faculty and residents any more because of financial and time constraints," Shortliffe says. Still, she remains optimistic that the system can be changed. "Good enough is not enough," she says.

"If one believes attitudes and decisions can be changed, dreams can become realities."



Eric Stark, MD

Class of 1994

Family Physician, Burlington, WA

When Eric Stark started medical school at Stanford, he says he heard frequent discussions about opening a free clinic to treat indigent patients. No one had taken on the project, so Stark and a couple of other students and faculty members got involved, establishing a clinic to provide care for the local indigent and homeless population. Through the experience, Stark and his fellow students learned many valuable lessons about the complicated challenges of setting up a medical practice.

Working with physicians from Stanford and the Palo Alto Veterans Affairs hospital, the students first formed a steering committee and began to look for a good location for the clinic. They identified a promising site at a church in Menlo Park but became embroiled in a major political battle over the plan, which was eventually rejected by the city council. Ultimately, they found a home for the clinic in the Red Cross office behind the Palo Alto train station.

“There was a lot of student thought about doing a free clinic, and I came along and got involved at the right time.”

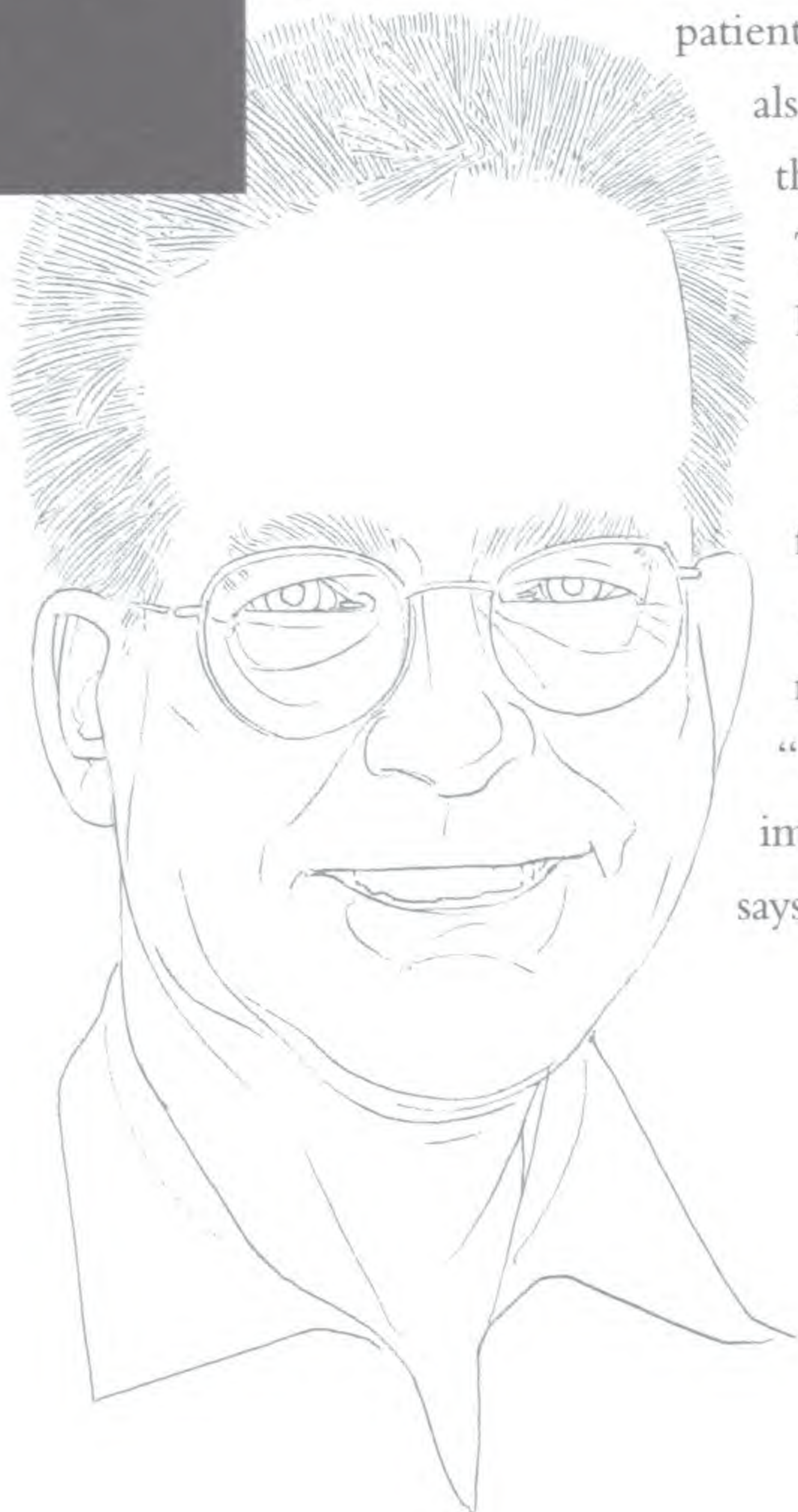
Another major obstacle the group had to tackle was obtaining malpractice insurance. “To open the clinic we had to convince the medical school to extend its insurance to cover the clinic staff,” Stark says. This additional coverage was not easy to negotiate, but Stanford finally did approve the extension. At one point during sensitive negotiations, however, Stark says a reporter asked him to tell her “off the record” about the status of the discussions. The next morning he found himself quoted on the front page of the newspaper. Another lesson learned, Stark laments. A final hurdle, he says, was obtaining funding for the project.

With all the business issues solved, in 1990 the clinic finally opened with hours every Sunday. Some days the student and physician volunteers saw only a few patients, but other days they saw 18-20 people. Once a month, a cardiologist attended, offering specialized cardiology care. Stark says the free clinic has been an important resource for patients who might not otherwise get medical care. He adds that it

also provides a valuable experience for students because it allows them to see patients they are not likely to encounter elsewhere.

The practice continues to operate as the Arbor Free Clinic in Palo Alto. Last year, the 150 volunteer medical students, residents, and physicians saw 650 patients.

Stark is no longer involved in the clinic; he is now doing family practice in Burlington, Washington. He says the experience of setting up the clinic was rewarding, but that some of the most important trials he faced were of the non-medical kind. “The biggest lessons I learned were administrative — just how important the details of scheduling, staffing, and location are,” Stark says. “Those lessons paid off, because that is a lot of what I do now.”



Irving Weissman, MD

Class of 1965

Immunologist, Palo Alto

Irving Weissman became interested in immunology at an early age. He says he remembers reading a book in sixth grade called *The Microbe Hunters*, which initially sparked his fascination. Then he got a job as an assistant in the laboratory of a local pathologist who was a researcher in transplantation. The era — the mid-1950s — was an exciting time for immunology research. Scientists were just beginning to unravel the complexities of immune function and to perform bone marrow transplantation in animals. Weissman was an enthusiastic

pupil. He became familiar with the body of research in transplantation, at one point even writing to an established scientist to provide the correct explanation for why his experiment had failed.

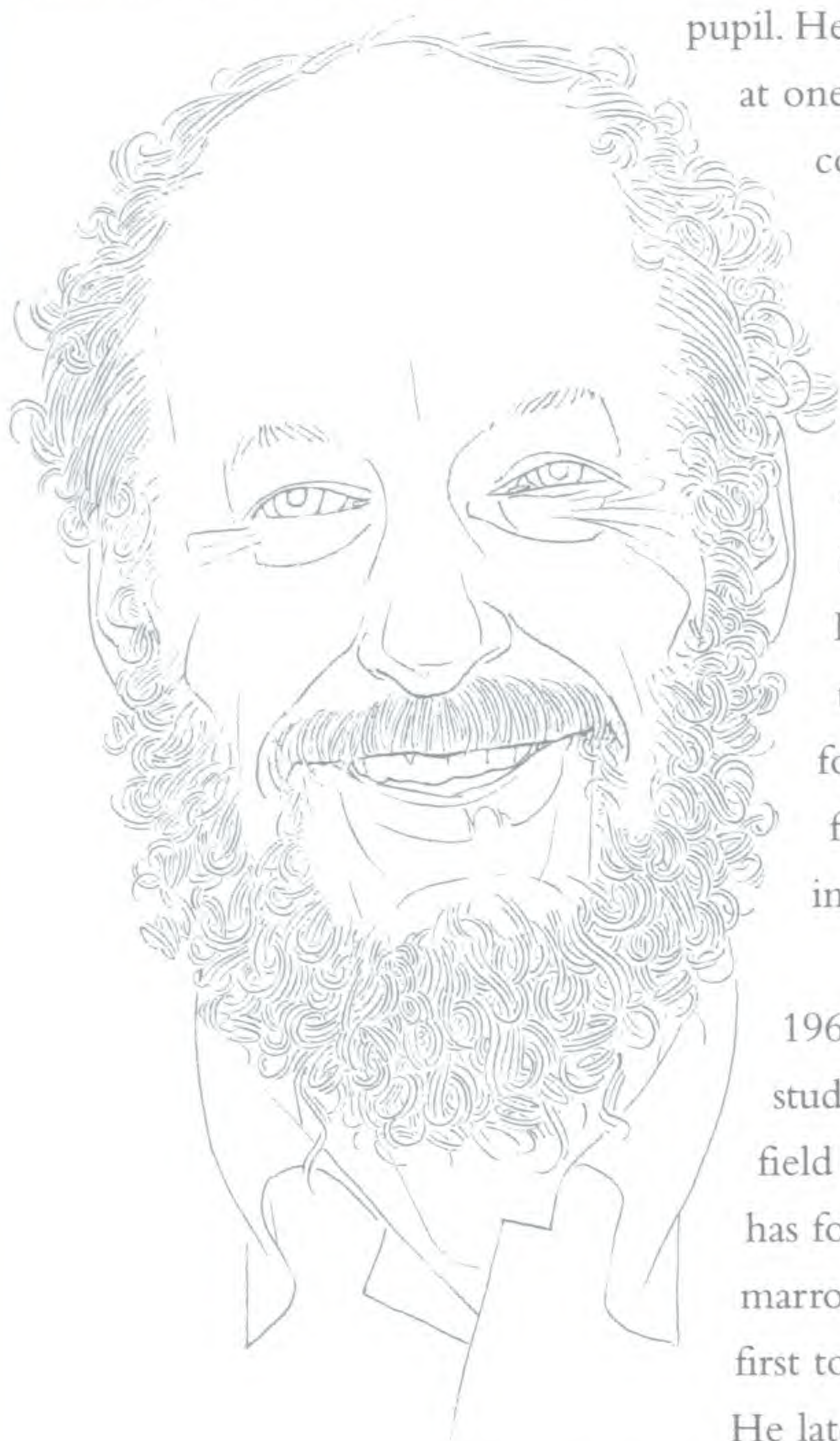
Weissman's interest in immunology and scientific investigation drew him to Stanford. "It was the only school that offered me the opportunity to do research while earning a medical degree," he says. Working in a laboratory provided by faculty member Henry Kaplan, Weissman discovered that the thymus serves as a developmental incubator for cells that recognize viral infection and foreign tissue transplants. These thymic immune cells became known as T cells.

Weissman joined the Stanford faculty in 1969. Since then, he has inspired generations of students and made numerous contributions to the field of immunology. Much of Weissman's work has focused on stem cells — the cells in the bone marrow that give rise to blood and immune cells. Weissman was the first to identify the earliest blood-forming stem cells in any species. He later showed that stem cells could be used effectively in bone

marrow transplantation. One of Weissman's most well-known accomplishments, was the isolation, in pure form, of all the progenitors of blood and immune cells at each stage of their specialization. Another major milestone was the discovery that lymphocytes use surface proteins to recognize where they should go when they leave the blood. This finding led to a whole new area of research involving cell-to-cell interactions.

Recently Weissman founded two companies — Systemix and Stem Cells Inc. — to promote advanced stem cell research. "I formed these companies to let me do the translational work of bringing discoveries from the bench to bedside," Weissman says. At both the company labs and at Stanford, what he enjoys most, he says, is watching young people explore new ideas and "just the doing science and seeing how it all comes out."

"I wanted to make cellular immunology and stem cell biology as clean as biochemistry."



Augustus A. White III, MD, PhD

Class of 1961

Orthopedic Surgeon, Boston

A pioneer in the field of spinal surgery, Augustus White has helped mend hundreds of patients with debilitating injuries and disorders. “My greatest satisfaction, without a doubt, is being able to use my head and my hands together to benefit another human being,” he says.

White chose to study orthopedics partly because he wanted to treat a diverse patient population and partly because he was interested in sports medicine. In prep school and college, White was involved in football, lacrosse, and wrestling, so he saw sports medicine

as a natural outgrowth of his fondness for athletics. During his residency in orthopedics at Yale, however, White became interested in spinal surgery and the psychological effects of back pain. A mentor who encouraged this interest suggested he pursue an academic career.

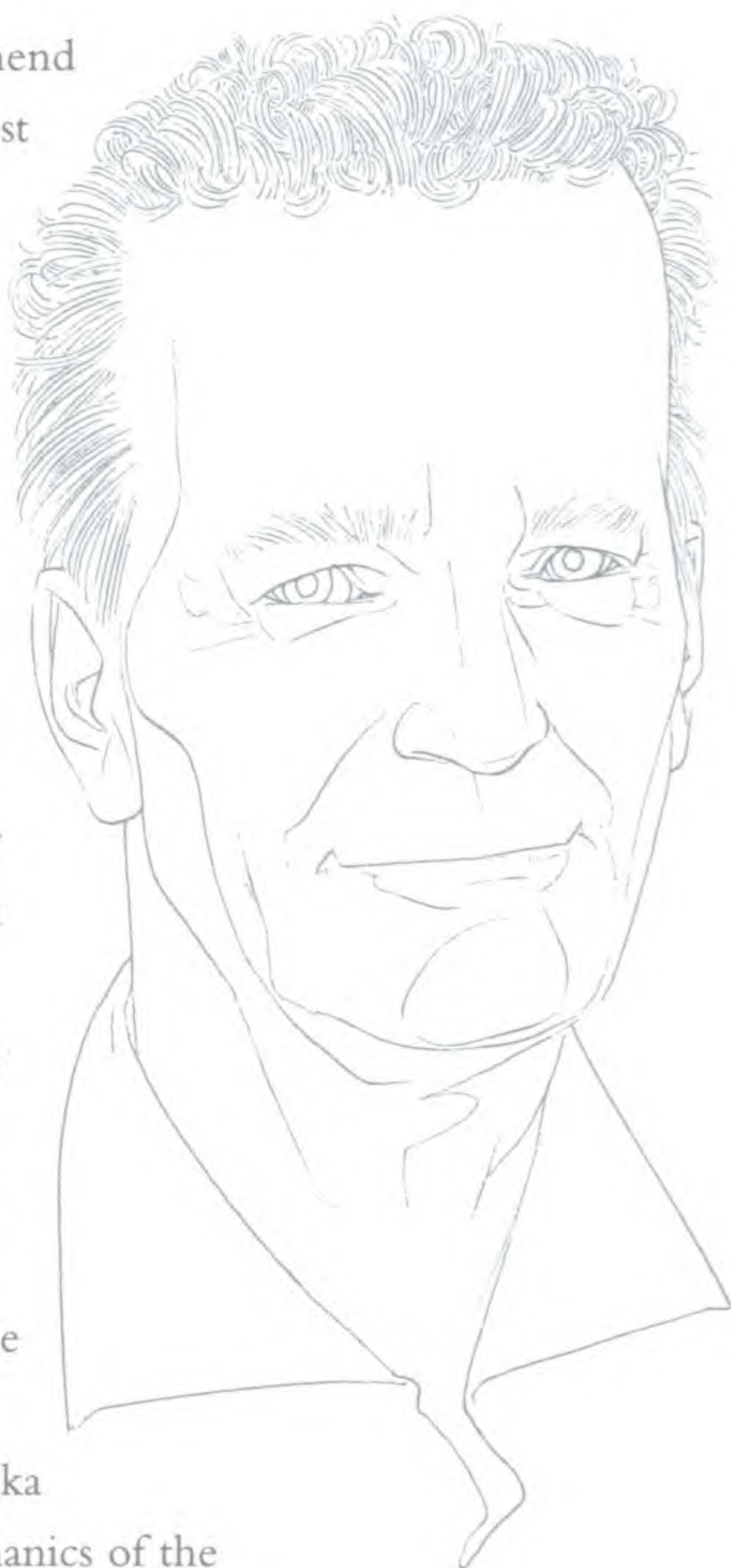
But first, White joined the Army and was sent to an evacuation hospital in Vietnam. “I spent a year sitting by a river of blood, trying to pull a few lives out,” he says. He also did some volunteer work in a nearby leper colony. Later, White was awarded a Bronze Star for his service in Vietnam.

After leaving Vietnam, he went to The Karolinska Institute in Stockholm to do research on the biomechanics of the spine. He began to explore how the “hardware” and “software” of living tissue work together in a fully functional spine. Upon returning to Yale, he joined forces with an

engineering colleague to work on the problem and later founded one of the first orthopedic biomechanics laboratories in the nation. In 1978, after becoming a professor of orthopedics at Yale, he was recruited to launch and chair an academic orthopedic department at Harvard, where he has remained as a professor for the last 22 years.

As an academic physician, White has enjoyed his role as an educator, passing on his knowledge and expertise in spine surgery to residents and postdoctoral fellows. He has written the seminal textbook on the subject, *Clinical Biomechanics of the Spine*. He also wrote a book for patients titled *Your Aching Back*. The book, which is published in the United States and Germany, provides information to help spine patients deal with the pain, confusion, and anxiety brought on by their disorders.

More recently, White has become focused on how cultural differences impact patient care and the healing process. “There is a tremendous disparity in the quality of care among various racial groups, the poor, and the elderly, and part of that is the result of psychological distancing on the part of the physician,” White says. “We have come to understand that good care requires doctors to have some insight into the patient’s culture.”



“My Stanford medical education helped me toward the realization that happiness is found in the activity of helping others.”

Joe Wray, MD, MPH

Class of 1952

Pediatrician, New York

By the time Joe Wray was in third grade, he knew he wanted to be a pediatrician. "That made life very simple," Wray says. Everything he did was oriented toward that goal — from his studies in school to the merit badges he earned as a scout. He even chose to play the violin so he could be ambidextrous and better at surgery. But he never expected his work to have such a global impact. Wray has been to more than 80 countries, helping to establish medical training and public health programs and advising world leaders on health issues.

When Wray finished his undergraduate training at Stanford, he immediately enrolled in the medical school. After a stint in the Air Force Medical Corps and a pediatric residency, he decided he wanted to experience another culture.

Wray started looking for a job overseas, and eventually a Turkish physician who was opening a hospital in Ankara invited him to be the first chief resident. So in 1956, Wray went to help establish a Turkish children's hospital. The job involved setting up the kitchen, labs, and X-ray department; acquiring washers and dryers so patients could have clean linens; and producing manuals for nurses. "It was a fantastic experience," Wray says.

During this time, two related events dramatically changed Wray's focus. One was his realization that the children who were dying at the hospital could have been saved if they had gotten better nutrition and primary health care in their villages. The other was learning about an opportunity to work with the Rockefeller Foundation to improve medical care in developing nations. He was accepted as a member of the Rockefeller Foundation team and

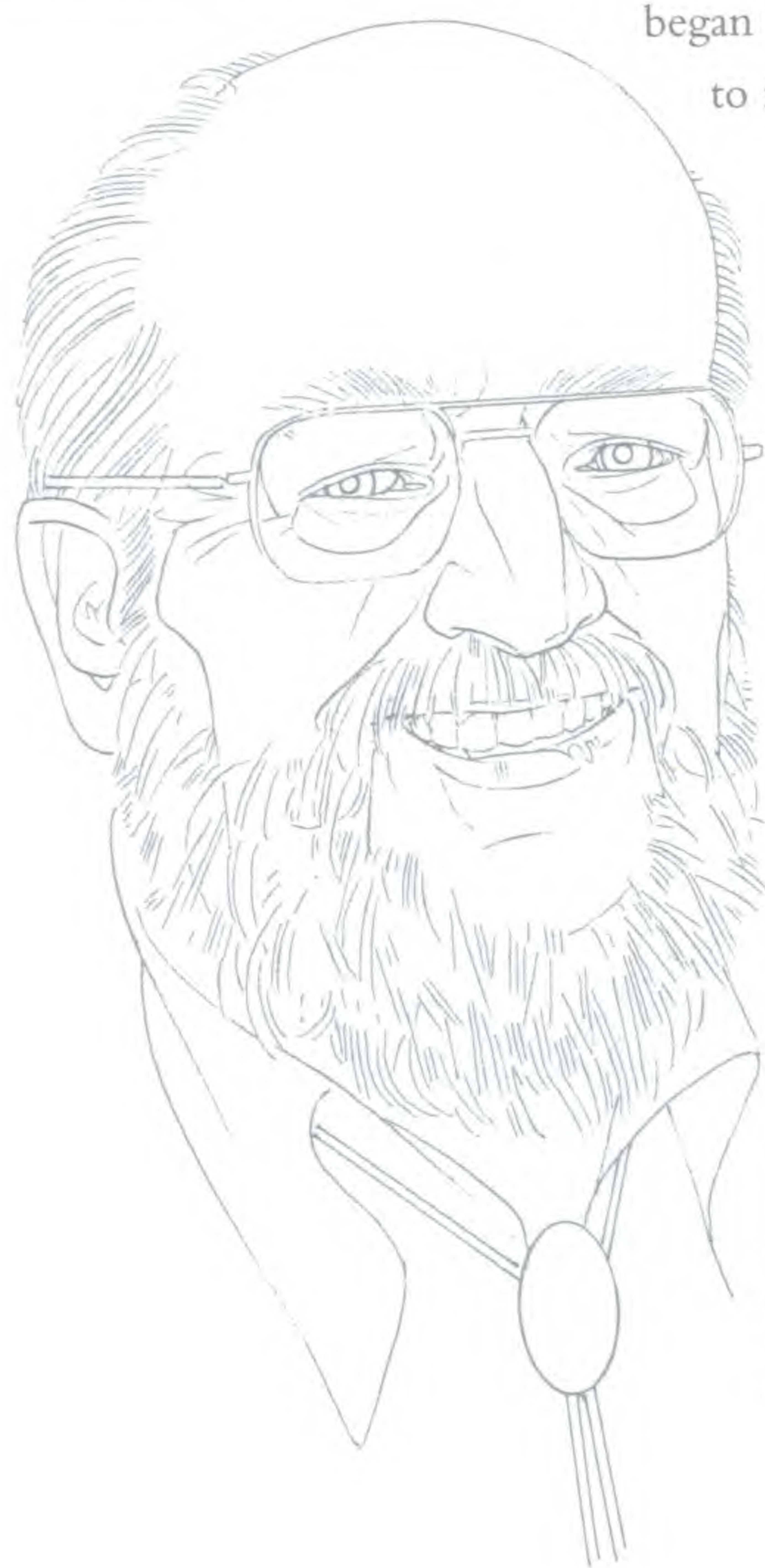
began to treat children before they became sick enough to need hospitalization.

After a second Rockefeller Foundation assignment in Colombia, where he taught medical students how to take care of children in rural villages, Wray returned to the United States to earn a master's degree in public health. He then went back overseas to help set up a new medical school in Thailand. "We caught medical students early in their careers and got them turned on to rural health care," he says.

In the mid-1970s, Wray spent a year as a fellow at the Center for Advanced Study in Behavioral Sciences at Stanford. He then took a teaching position at Harvard School of Public Health and later at Columbia University, where today he is an emeritus professor.

Living in the U.S. has not kept him deskbound, however. Wray continues to spend much of his time overseas, acting as a consultant for UNICEF, the Ford Foundation, the Carnegie Foundation, and other groups. "I don't really want to retire, and they won't let me," Wray says.

"One of my great satisfactions is that all over the world children are getting better care from people I have taught."



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